Operation/Reference Guide

NXV-300

Modero© Virtual Touch Panel

Touch Panels

Last Revised: 12/19/2012

AMX Limited Warranty and Disclaimer

This Limited Warranty and Disclaimer extends only to products purchased directly from AMX or an AMX Authorized Partner which include AMX Dealers, Distributors, VIP's or other AMX authorized entity.

AMX warrants its products to be free of defects in material and workmanship under normal use for three (3) years from the date of purchase, with the following exceptions:

- Electroluminescent and LCD Control Panels are warranted for three (3) years, except for the display and touch overlay components are warranted for a period of one (1) year.
- Disk drive mechanisms, pan/tilt heads, power supplies, and MX Series products are warranted for a period of one (1) year.
- AMX lighting products are guaranteed to switch on and off any load that is properly connected to our lighting products, as long as the AMX lighting products are under warranty. AMX also guarantees the control of dimmable loads that are properly connected to our lighting products. The dimming performance or quality there of is not guaranteed, impart due to the random combinations of dimmers, lamps and ballasts or transformers.
- AMX software is warranted for a period of ninety (90) days.
- Batteries and incandescent lamps are not covered under the warranty.
- AMX AutoPatch Epica, Modula, Modula Series4, Modula CatPro Series and 8Y-3000 product models will be free of defects in materials and manufacture at the time of sale and will remain in good working order for a period of three (3) years following the date of the original sales invoice from AMX. The three-year warranty period will be extended to the life of the product (Limited Lifetime Warranty) if the warranty card is filled out by the dealer and/or end user and returned to AMX so that AMX receives it within thirty (30) days of the installation of equipment but no later than six (6) months from original AMX sales invoice date. The life of the product extends until five (5) years after AMX ceases manufacturing the product model. The Limited Lifetime Warranty applies to products in their original installation only. If a product is moved to a different installation, the Limited Lifetime Warranty will no longer apply, and the product warranty will instead be the three (3) year Limited Warranty.

All products returned to AMX require a Return Material Authorization (RMA) number. The RMA number is obtained from the AMX RMA Department. The RMA number must be clearly marked on the outside of each box. The RMA is valid for a 30-day period. After the 30-day period the RMA will be cancelled. Any shipments received not consistent with the RMA, or after the RMA is cancelled, will be refused. AMX is not responsible for products returned without a valid RMA number.

AMX is not liable for any damages caused by its products or for the failure of its products to perform. This includes any lost profits, lost savings, incidental damages, or consequential damages. AMX is not liable for any claim made by a third party or by an AMX Authorized Partner for a third party.

This Limited Warranty does not apply to (a) any AMX product that has been modified, altered or repaired by an unauthorized agent or improperly transported, stored, installed, used, or maintained; (b) damage caused by acts of nature, including flood, erosion, or earthquake; (c) damage caused by a sustained low or high voltage situation or by a low or high voltage disturbance, including brownouts, sags, spikes, or power outages; or (d) damage caused by war, vandalism, theft, depletion, or obsolescence.

This limitation of liability applies whether damages are sought, or a claim is made, under this warranty or as a tort claim (including negligence and strict product liability), a contract claim, or any other claim. This limitation of liability cannot be waived or amended by any person. This limitation of liability will be effective even if AMX or an authorized representative of AMX has been advised of the possibility of any such damages. This limitation of liability, however, will not apply to claims for personal injury.

Some states do not allow a limitation of how long an implied warranty last. Some states do not allow the limitation or exclusion of incidental or consequential damages for consumer products. In such states, the limitation or exclusion of the Limited Warranty may not apply. This Limited Warranty gives the owner specific legal rights. The owner may also have other rights that vary from state to state. The owner is advised to consult applicable state laws for full determination of rights.

EXCEPT AS EXPRESSLY SET FORTH IN THIS WARRANTY, AMX MAKES NO OTHER WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING ANY IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. AMX EXPRESSLY DISCLAIMS ALL WARRANTIES NOT STATED IN THIS LIMITED WARRANTY. ANY IMPLIED WARRANTIES THAT MAY BE IMPOSED BY LAW ARE LIMITED TO THE TERMS OF THIS LIMITED WARRANTY. EXCEPT AS OTHERWISE LIMITED BY APPLICABLE LAW, AMX RESERVES THE RIGHT TO MODIFY OR DISCONTINUE DESIGNS, SPECIFICATIONS, WARRANTIES, PRICES, AND POLICIES WITHOUT NOTICE.

Table of Contents

Overview 1
Product Specifications 1
Installation 3
Wiring and Connections 3
Ethernet 10/100 Base-T RJ-45 Wiring Configuration 3
PoE (Power Over Ethernet) 3
Setup Pages and Descriptions 5
Overview 5
Determining the IP Address of the NXV-300 5
Zero-Configuration Client 5
Accessing the NXV-300 6
Status 7
Display 8
Panel Information 9
Panel Information - Info Tab 9
Panel Information Page - Config Tab 10
Panel Information Page - File Tab 11
File Information Page - Project Tab 11
Protected Setup Page 12
Protected Settings Page Icons 14
System Settings Page 15
System Settings Page - IP Tab 15
System Settings - Master Tab 16
G4 Web Control Page 17
Password Page 18
Panel Statistics Page 19
Panel Statistics - ICSP Tab 19
Panel Statistics - Blinks Tab 20
Connection Utility 21
NetLinx Programming 23
Button Assignments 23
Page Commands 23
@APG 23
@CPG 23
@DPG 24
@PDR 24
@PHE 24
@PHP 24
@PHT 24

@PPA 25
@PPF 25
@PPG 25
@PPK 25
@PPM 26
@PPN 26
@PPT 26
@PPX 26
@PSE 27
@PSP 27
@PST 27
PAGE 27
PPOF 27
Programming Numbers for Colors, Fonts, and Borders 28
PPOG 28
PPON 28
RGB Triplets and Names For Basic 88 Colors 29
Font Styles and ID Numbers 31
Border Styles And Programming Numbers 31
"^" Button Commands 34
^ANI 34
^APF 34
^BAT 34
^BAU 35
^BCB 35
^BCF 35
^BCT 36
^BDO 36
^BFB 36
^BIM 36
^BMC 37
^BMF 38
^BMI 39
^BML 40
^BMP 40
^BNC 40
^BNN 40
^BNT 40
^BOP 41
^BOR 41
^BPP 41
^BRD 42
^BSF 42
^BSM 42
^BVL 42
^BVN 42
^BVP 43
^BVT 43
^BWW 43
^CPF 43
^DPF 44
^ENA 44

^FON 44
^GDI 44
^GIV 45
^GLH 45
^GLL 45
^GRD 45
^GRU 45
^GSC 46
^GSN 46
^ICO 46
^JSB 46
^JSI 47
^JST 47
^SHO 47
^TEC 47
^TEF 48
^TOP 48
^TXT 48
^UNI 48
Text Effect Names 49
Button Query Commands 50
?BCB 51
?BCF 51
?BCT 52
?BMP 52
?BOP 53
?BRD 53
?BWW 54
?FON 54
?ICO 55
?JSB 55
?JSI 56
?JST 56
?TEC 57
?TEF 57
Panel Runtime Operations 58
@AKB 58
AKEYB 58
?TXT 58
AKEYP 59
AKEYR 59
@AKP 59
@AKR 59
@EKP 59
PKEYP 59
@PKP 60
SETUP 60
SLEEP 60
TPAGEON 60
TPAGEOFF 60
@VKB 60
WAKE 60

Input Commands 61
^KPS 61
^VKS 61
Embedded codes 62
Panel Setup Commands 63
@PWD 63
^PWD 63
Dynamic Image Commands 63
^BBR 63
^RAF 63
^RFR 63
^RMF 64
^RSR 64
^RAF 64
Appendix A: Telnet Commands 65
Overview 65
Establishing a Terminal Connection Via Telnet 65
Terminal Commands 66
Appendix B - Troubleshooting 71

Overview

The NetLinx NXV-300 Modero Virtual Touch Panel (**FG2263-01**) is a small rack-mountable device (similar in size to an NI-700 NetLinx Controller) that allows users to access a network via any PC or Macintosh computer via Virtual Network Connection (VNC). Instead of using an actual touch screen to interface with a network, users navigate to the device using a browser (Internet Explorer, Firefox and Safari for PCs and Firefox and Safari for Macs) and login with a username and password.

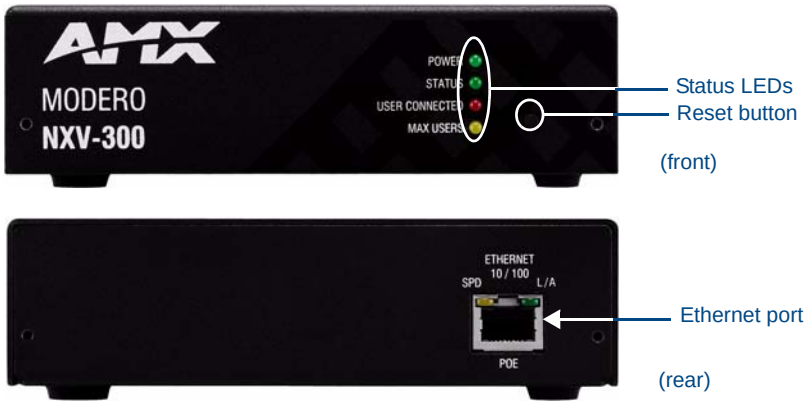

FIG. 1 NXV-300 Modero Virtual Touch Panel

Product Specifications

NXV-300 (FG2263-01) Specifications	
Front Panel Components:	• Power LED (green): Lights to indicate that the unit has powered up. • Any state other than on indicates the unit is either not powered, or has not completed boot up. • Status LED (green): Lights to show the status of the connection between the NXV-300 and the Master. • User Connected LED (red): Lights to indicate a user remotely accessing the device. • Maximum User LED (yellow): Lights to indicate that the device has the maximum number of users (3) connected to it. • Reset Button: Holding reset button for 5 seconds will access the Setup pages. Holding reset button for 30 seconds will reset the device to factory defaults.
Rear Panel Connectors:	Ethernet Port - 10/100 Ethernet with PoE. LEDs show communication activity, connection status, speeds, and mode information: • SPD (speed) - Yellow LED lights On when the connection speed is 100 Mbps and turns Off when the speed is 10 Mbps. • L/A (link/activity) - Green LED lights On when the Ethernet cables are connected and terminated correctly, and blinks when receiving Ethernet data packets.
Power Requirements:	• Maximum power draw: 2.2 watts • PoE powered – no local Power Supply needed • IEEE 802.3af Compliant
Memory:	• 64 Mbytes of RAM • 256 Mbytes of FLASH
Dimensions (HWD):	1.63" x 5.50" x 4.06" (4.13 cm x 13.97 cm x 10.32 cm)
Weight:	1.40 lbs. (0.64 kg)
Operating Environment:	• Operating Temperature: 32°F - 104°F (0°C - 40°C) • Relative Humidity: 5% to 85% non-condensing • Intended for indoor use only

NXV-300 Specifications (Cont.)	
Certifications:	• FCC Class B • CE • IEC60950 • RoHS
Other AMX Equipment:	• PS-POE-AF PoE Injector (FG423-80) • AC-DIN-CS3 DIN Rail Mounting Bracket (FG532-01) • AC-RK Accessory Rack Kit (FG515)

The NXV-300 can be used in most AMX networks as a controlling touch panel, as shown in FIG. 2:

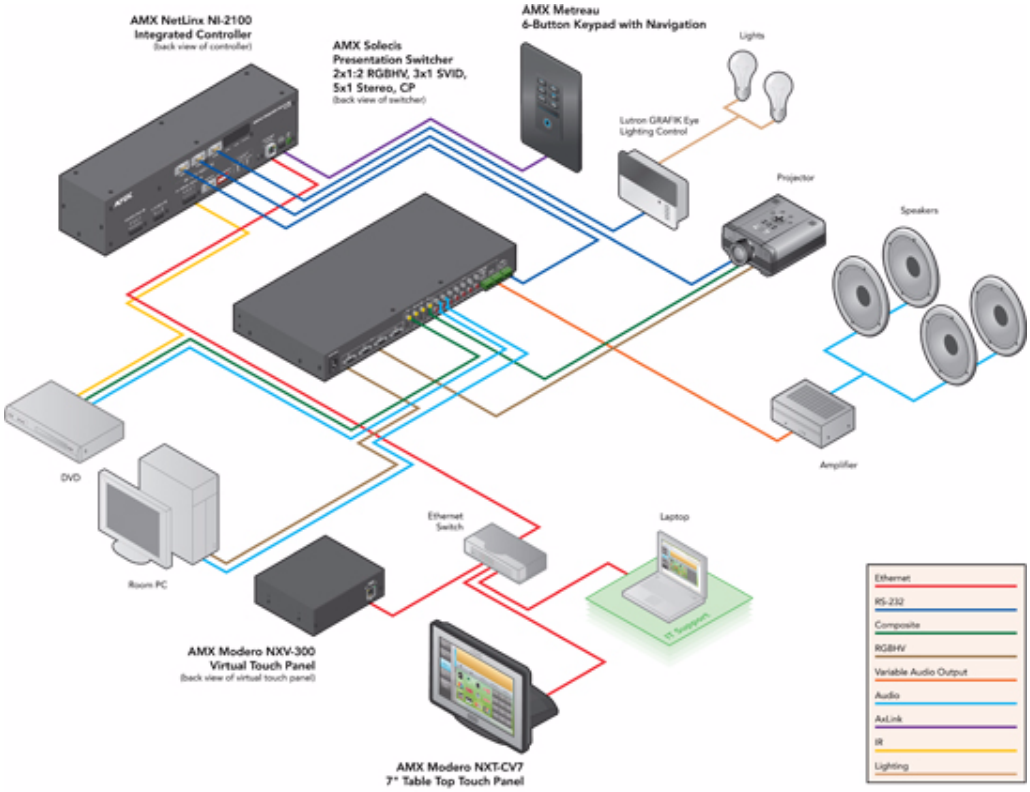

FIG. 2 AMX Network utilizing an NXV-300 Modero Virtual Touch Panel

Installation

Wiring and Connections

NOTE

To avoid any damage to the electronic component, installation must be performed in an ESD safe environment.

The NXV-300 is installed to the NetLinx Master, and passes NetLinx control commands to the Master via Ethernet 10/100 cable, as indicated in FIG. 3:

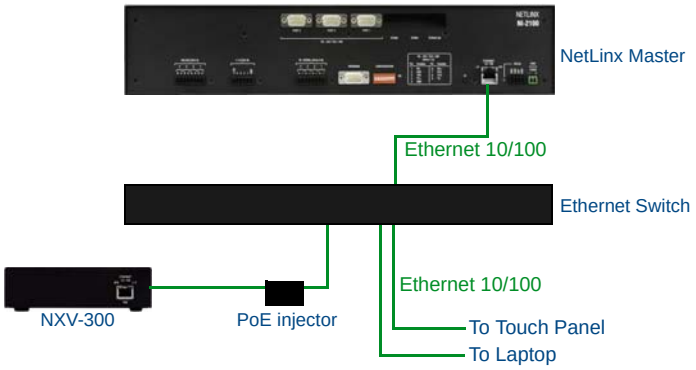

FIG. 3 NXV-300 installation

After you have completed the installation, consult the *Setup Pages and Descriptions* section on page 5.

Ethernet 10/100 Base-T RJ-45 Wiring Configuration

The table below describes the pinouts, signals, and pairing for the Ethernet 10/100 Base-T connector and cable.

Ethernet Pinouts and Signals					
Pin	Signals	Connections	Pairing	Color	Diagram
1	TX +	1 --------- 1	1 --------- 2	White-Orange	
2	TX -	2 --------- 2		Orange	
3	RX +	3 --------- 3	3 --------- 6	White-Green	
4	no connection	4 --------- 4		Blue	
5	no connection	5 --------- 5		White-Blue	
6	RX -	6 --------- 6		Green	
7	no connection	7 --------- 7		White-Brown	
8	no connection	8 --------- 8		Brown	

PoE (Power Over Ethernet)

The NXV-300 uses CAT5/CAT6 wire via the Ethernet port for PoE power. The maximum power draw for the NXD-300 is 2.2 watts. Use the PS-POE-AF Power over Ethernet Injector (FG423-80) to simplify wiring and installation by eliminating the need for an AC outlet at each point of installation.

NOTE

The NXV-300 can be placed up to approximately 330' (100 meters) from PoE Injector.

- If used with a non PoE-capable Ethernet switch, then an optional PS-POE-AF Power-over-Ethernet (PoE) power supply is required to provide power to the NXV-300.
- If the NXV-300 is used with a PoE-capable Ethernet switch, then no PoE Injectors are required.

Setup Pages and Descriptions

Overview

NXV-300 devices allow updates and changes to Setup and Protected Setup pages in the same way as any other AMX touch panel. The main difference is you may make various configuration settings via a web browser on any PC that has access to the NXV-300 device. Entering the device's IP address in an enabled browser (Microsoft Internet Explorer, Mozilla Firefox and Apple Safari for PCs and Firefox and Safari for Macintoshes) allows the device to be accessed in that browser. Once contact is established, and a username and password entered, the Setup pages may be reached and updated (FIG. 4).

FIG. 4 NXV-300 Main Setup Page

NOTE

Copyright (c) 2009 GoAhead Software, Inc. All Rights Reserved.

Determining the IP Address of the NXV-300

NXV-300 units feature a built-in zero-configuration networking client that allows you to determine the unit's IP address via a client that uses the Zero Configuration Networking Standard. Zero Configuration (or Zeroconf) technology provides a general method to discover services on a local area network. In essence, it allows you to set up a network without any configuration, as described below.

Zero-Configuration Client

You will need a zero-configuration client to determine the IP address of the NXV-300. Many zero-configuration clients are currently available. However, for the purposes of this document, we will refer to *Bonjour for Windows*, which is Apple's implementation of the Zero Configuration Networking Standard. It is free and widely available for download.

NOTE

Bonjour and Bonjour for Windows are trademarks of Apple Inc., registered in the U.S. and other countries.

If you don't already have it installed on your PC, download and install *Bonjour for Windows* before you begin.

NOTE

*The NXV-300 is set to **DHCP** by default. If the device does not get an address from a DHCP request, it will set itself to 169.254.2.2 and change the IP to **Static**. Rebooting and connecting the device to a known DHCP network will not work, and the device will need to be reset by pressing and holding the Reset button for 30 seconds.*

1. With *Bonjour for Windows* running on a PC that has access to the LAN that the NXV-300 resides on, connect the NXV-300 to the network (see *Wiring and Connections* section on page 3).
2. Select the device from the Bonjour list of devices on the browser.

3. The browser will bring up the main touch panel page. To open the *Setup* pages, press and hold the **Reset** Button on the front of the device for 5 seconds.
4. Access the *Protected Setup* pages, using your password if necessary. The unit's IP Address is displayed in the *System Settings - IP* page in the *Protected Setup* pages.

At this point, you can assign a static IP Address if necessary.

If no DHCP server can be detected by the device, then the device will default to the IP address **169.254.2.2** and change the IP setting to **Static**. To connect to a DHCP server in the future, the device must be reset by holding and pressing the **Reset** button on the front of the device for 30 seconds.

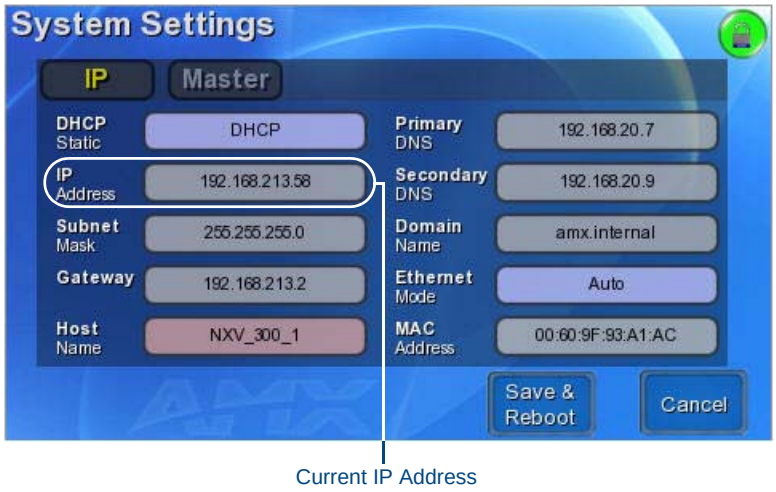

FIG. 5 System Settings - IP page and IP address

NOTE

Bonjour for Windows operates as a plug-in for Microsoft Internet Explorer, and is displayed in the IE Explorer Bar. If you have installed Bonjour for Windows, but don't see the Bonjour toolbar icon, you may need to "unlock" and expand the toolbars to see it.

Accessing the NXV-300

From any computer or Netbook that has access to the LAN that the NXV-300 resides on, open a web browser and type the IP address of the target NXV-300 unit in the Address Bar.

NOTE

The default state of the NXV-300 allows anyone with the device IP address to access the device, up to the maximum of three users at a time. This access status may be changed by setting a password through the G4 Web Control page, which then prompts the user to enter the password when accessing the device.

Status

The *Status* page (FIG. 6) is the first page viewed when entering the *Setup* page interface from the main touch panel pages. The *Status* page may be reached by pressing and holding down the **Reset** button on the front of the device for six seconds.

FIG. 6 Status Page

The elements of the *Status* page are described in the table below:

Status Page Elements	
Connection Status icon:	This visual display of the connection status allows the user to have a current update of the panel's connection status regardless of what page is currently active. • A Lock only appears on the icon if the panel has established a connection with a currently secured target Master (*requiring a username and password*).
Connection Status:	Displays whether the panel is communicating externally, the encryption status of the communicating Master, what connection type is being used (*Ethernet* only), and of what System the panel is a part. This visual display of the connection status is also reflected at the upper-right of each firmware page. This allows the user to have a current visual update of the panel's connection status regardless of what page is currently active. • The word "*Encrypted*" appears only when an encrypted connection is established with a target Master. Otherwise, the status reads "*No Encryption*". • When a connection is established, the message displayed is: "*Connected via Ethernet* ". • If no connection can be established by the Modero panel, it will continue to try and establish a connection while displaying: "*Attempting via...*". • The panel must be rebooted before incorporating any panel communication changes and detecting any active Ethernet connections. ***The Ethernet connection is only detected after the panel is rebooted.***
Display:	• This button opens the *Display* page (page 8).
Info:	• This button opens the *Panel Information* page (page 9).
Protected Setup:	• This button opens the *Protected Setup* page (page 12).
Current Time/Date	• The time and date in these fields are provided by the Master.
Exit:	Returns to the Main touch panel page. In this case, the previous page is the default Main page.

Display

The *Display* Page (FIG. 7), accessed by pressing the **Display** button on the *Status* page, allows adjustment of the default panel settings.

FIG. 7 Display Page

The elements of the *Display* page are described in the table below:

Display Page Elements	
Connection Status icon:	This visual display of the connection status allows the user to have a current visual update of the panel's connection status regardless of what page is currently active. • A Lock only appears on the icon if the panel has established a connection with a currently secured target Master (*requiring a username and password*).
Inactivity Page Wait Time:	Sets the number of minutes of inactivity before the panel automatically flips to a pre-selected touch panel page. When the device goes into this inactivity mode, the LCD does not power down. • Press the UP/DN buttons to increase/decrease the time the panel can remain inactive before it flips to the preset page. Range = 0 - 240 minutes. • Use this button to set the timeout value to zero and disable the inactivity page flip mode.
Inactivity Page:	Lists the touch panel page used for the Inactivity page flip.
Back:	Returns to the previously active touch panel page.

Panel Information

The Project Information page displays the TPDesign4 (TPD4) project file properties currently loaded on the selected Modero panel (FIG. 8). Refer to the *TPDesign4 Touch Panel Program* instruction manual for more specific information on uploading TPDesign4 files to a panel. Select between the **Info**, **Config**, **File**, and **Project** tabs to view the appropriate information.

Panel Information - Info Tab

FIG. 8 Panel Information Page - Info Tab

The elements of the *Panel Information* page **Info** tab are described in the table below:

Panel Information Page - Info Tab Elements	
Connection Status icon:	This visual display of the connection status allows the user to have a current visual update of the panel's connection status, regardless of what page is currently active. • A Lock only appears on the icon if the panel has established a connection with a currently secured target Master requiring a username and password.
Panel Type:	Displays the model of the Modero panel being used.
Firmware Version:	Displays the G4 firmware version being used by the panel. • Verify that the panel has the latest version from **www.amx.com**.
Serial Number:	Displays the specific serial number value assigned to the panel.
Setup Pages:	Displays the type and version of the Setup pages being used by the panel.
Panel Start Time:	Displays the last time the panel booted.
Screen Width:	Displays the pixel width being used to display the incoming signal on the Modero panel.
Screen Height:	Displays the pixel height being used to display the incoming signal on the Modero panel.
Screen Refresh:	Displays the refresh rate applied to the incoming signal from the panel. *Default rate is 60.*
Screen Rotation:	Displays the degree of rotation applied to the on-screen image.
File System:	Displays the amount of Flash memory available on the Modero panel.
RAM:	Displays the available RAM (or Extended Memory module) on the Modero panel.
Back:	Returns to the previously active touch panel page.

Panel Information Page - Config Tab

FIG. 9 Panel Information Page - Config Tab

The elements of the *Panel Information* page **Config** tab are described in the table below:

Project Information Page - Config Tab Elements	
Connection Status icon:	This visual display of the connection status allows the user to have a current visual update of the panel's connection status regardless of what page is currently active. • A Lock only appears on the icon if the panel has established a connection with a currently secured target Master (*requiring a username and password*).
Power Up Page:	Displays the first touch panel page assigned for display after the device is powered-up. • This information is taken from the TPD4 project file. Most projects begin with a Main page.
Start-Up String:	Displays the start-up string.
Wake-Up String:	Displays the wake up string used after an activation from a timeout.
Sleep String:	Displays the sleep string used during a panel's sleep mode.
Setup Port:	Displays the setup port information/value being used by the panel.
High Port:	Displays the high port (port count) value for the panel.
High Address:	Displays the high address (address count) value for the panel.
High Channel:	Displays the high channel (channel count) value for the panel.
High Level:	Displays the high level (level count) value being used by the panel.
Back:	Returns to the previously active touch panel page.

Panel Information Page - File Tab

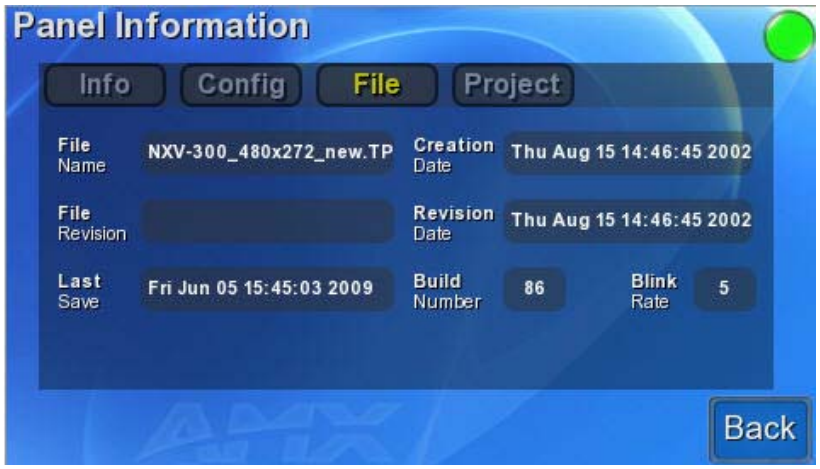

FIG. 10 Panel Information Page - File Tab

The elements of the *Panel Information* page **File** tab are described in the table below:

Project Information Page - File Tab Elements	
Connection Status icon:	This visual display of the connection status allows the user to have a current visual update of the panel's connection status regardless of what page is currently active. • A Lock only appears on the icon if the panel has established a connection with a currently secured target Master (*requiring a username and password*).
File Name:	Displays the name of the TPDesign4 project file downloaded to the panel.
File Revision:	Displays the revision number of the file.
Last Save:	Displays the last date the project was saved.
Creation Date:	Displays the project creation date.
Revision Date:	Displays the last revision date for the project.
Build Number:	Displays the build number information of the TPD4 software used to create the project file.
Blink Rate:	Displays the feedback blink rate (by 10th of a second).
Back:	Returns to the previously active touch panel page.

File Information Page - Project Tab

FIG. 11 Panel Information Page - Project Tab

The elements of the *Panel Information* page **Project** tab are described in the table below:

Project Information Page - File Tab Elements	
Connection Status icon:	This visual display of the connection status allows the user to have a current visual update of the panel's connection status regardless of what page is currently active. • A Lock only appears on the icon if the panel has established a connection with a currently secured target Master (*requiring a username and password*).
Designer ID:	Displays the designer information for the panel.
Dealer ID:	Displays the dealer ID number (*unique to every dealer and entered in TPD4*).
Job Name:	Displays the job name.
Sales Order:	Displays the sales order information.
Purchase Order:	Displays the purchase order information.
Job Comments:	Displays any comments associated to the job. These comments are taken from the TPD4 project file.
Back:	Returns to the previously active touch panel page.

Protected Setup Page

The *Protected Setup* page (FIG. 12) centers around the properties used by the panel for proper communication with the NetLinx Master. Enter the factory default password (***1988)*** into the password keypad (please refer to the *Password Page* on page 18 for more information) to access this page.

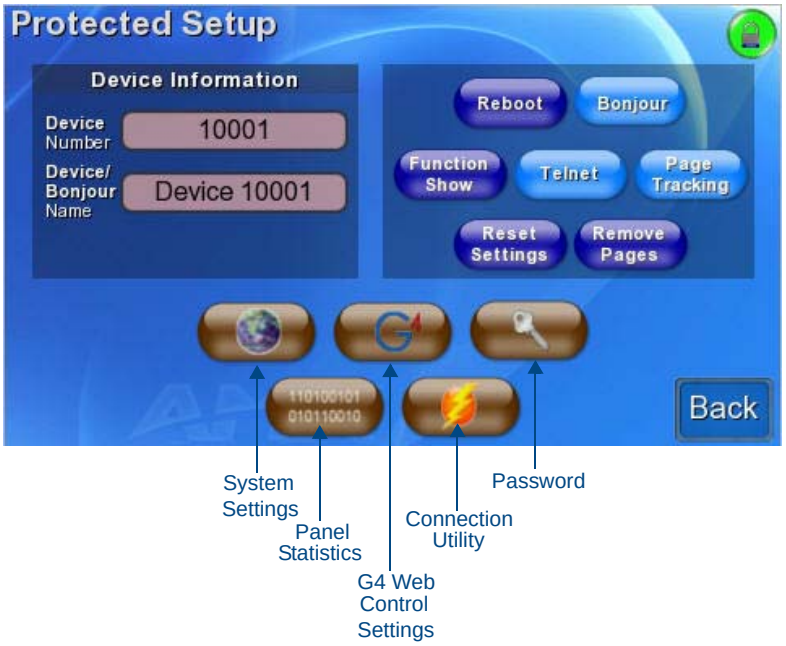

FIG. 12 Protected Setup Page

The elements of the Protected Setup page are described in the table below:

Protected Setup Page Elements	
Connection Status icon:	This visual display of the connection status allows the user to have a current visual update of the panel's connection status regardless of what page is currently active. • A Lock only appears on the icon if the panel has established a connection with a currently secured target Master, requiring a username and password.
Device Information:	• **Device Number:** Opens a keypad that is used to set and display the current device number. • **Device/Bonjour Name:** Opens a keypad that is used to set and display the current device name.
Reboot:	Press this button to restart the panel after saving any changes.

Protected Setup Page Elements (Cont.)	
Bonjour:	Press this button to enable or disable broadcast of any Zero Config information. **Note:** The device must be rebooted for the change to take effect.
Function Show:	Press this button to enable the display of the channel port and channel code in the top left corner of the button, the level port and level code in the bottom left corner, and the address port and address code in the bottom right corner (FIG. 14).
Telnet:	Press this button to enable or disable the telnet server on the panel. This feature focuses on direct telnet communication to the panel.
Page Tracking:	Press this button for the touch panel sends page data back to the NetLinx Master, or vice versa depending on the touch panel settings.
Reset Settings:	Press this button to wipe out all current configuration parameters on the touch panel (such as IP Addresses, Device Number assignments, Passwords, and other presets). • Pressing this button launches a Confirmation dialog which asks to confirm your selection. • This dialog is configured with a delay timer that does not enable the YES button for 5 seconds. This delay provides an additional amount of time for the user to confirm a decision.
Remove Pages:	Press this button to remove all current TPD4 touch panel pages currently on the panel (*including the pre-installed AMX Demo pages*). • Pressing this button launches a Confirmation dialog which asks to confirm your selection. • This dialog is configured with a delay timer that does not enable the YES button for 5 seconds. This delay provides an additional amount of time for the user to confirm a decision.
System Settings icon:	Press this button to configure communication settings between the NetLinx Master and the panel.
G4 Web Control icon:	Press this button to allow for password protection. This controls access to the NXV-300 pages, as well as specifying the maximum number of connected users.
Passwords icon:	Press this button to access the *Passwords* Page (page 18).
Panel Statistics icon:	Press this button to access the *Panel Statistics* Page (page 19).
Connection Utility icon:	Press this button to access the *Connection Utility* Page (page 21).
Back:	Saves the changes and returns to the previously active touch panel page.

Any use of the **Reset Settings** or **Remove Pages** buttons opens up the *Confirmation Dialog* window. The **Yes** button is grayed out for ten seconds while a timer reads down between it and the **No** button, and then becomes enabled. Clicking either button will return you to the *Protected Setup* page.

FIG. 13 Protected Setup page-System Settings confirmation dialog

Pressing the **Function Show** button once displays the function information on each button and slider in the *Setup* and *Protected Setup* pages (FIG. 13). Press the button again to hide the function information.

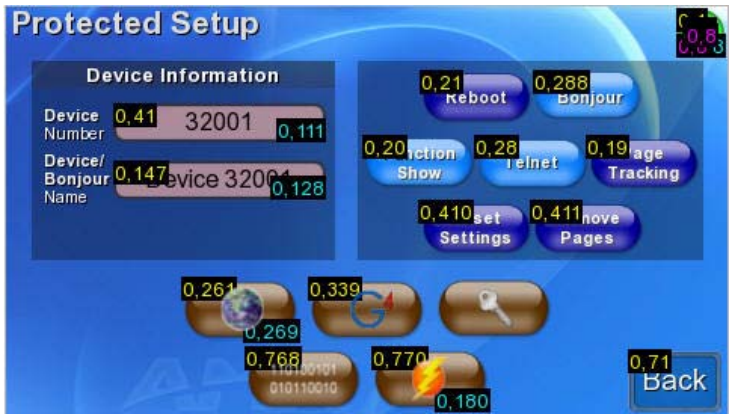

FIG. 14 Button/slider Function Show example

Protected Settings Page Icons

The interface for the *Protected Settings* page includes buttons featuring icons instead of text. These button icons include:

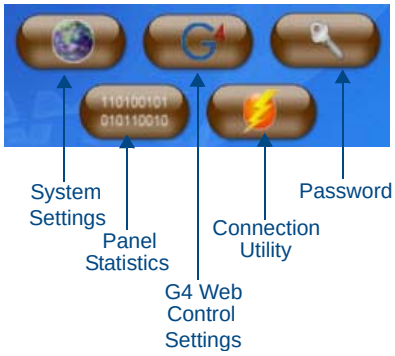

FIG. 15 Protected Settings page button icons

- **System Settings** (page 15): Press this button to configure communication settings between the NetLinx Master and the panel.
- **G4 Web Control** (page 17): Press this button to allow for password protection. This controls access to the NXV-300 pages, as well as specifying the maximum number of connected users via a Web-enabled computer or Netbook.
- **Passwords** (page 18): Press this button to access the *Passwords* Page.
- **Panel Statistics** (page 19): Press this button to access the *Panel Statistics* Page.
- **Connection Utility** (page 21): Press this button to access the *Connection Utility* Page.

System Settings Page

The *System Settings* page (FIG. 16) sets Primary and Secondary DNS Address information with its corresponding IP communication parameters, sets NetLinx Master communication settings, and reads the device number assigned to the Modero panel. Select between the **IP** and **Master** tabs to view the appropriate information.

NOTE

Changes made on any tab of this page are not saved until the panel is rebooted.

System Settings Page - IP Tab

The IP tab is the default tab on the *System Settings* page. This tab contains the main IP and MAC address information for the panel.

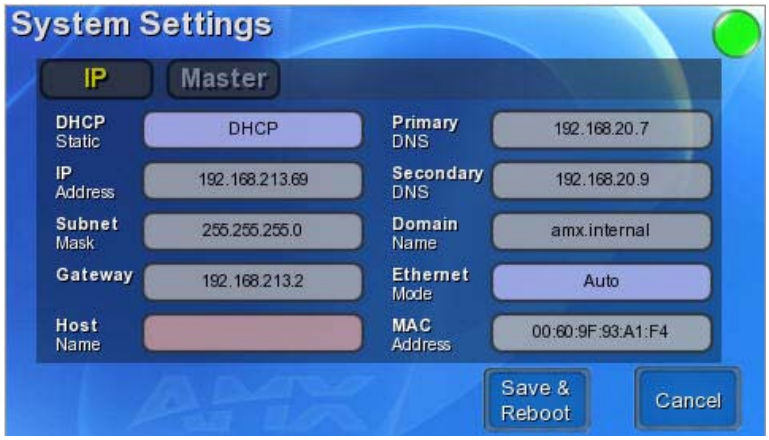

FIG. 16 System Settings Page - IP Tab

The elements of the *System Settings* page - **IP** Tab are as follows:

System Settings Page - IP Tab Elements	
Connection Status icon:	This visual display of the connection status allows the user to have a current visual update of the panel's connection status, regardless of what page is currently active. • A Lock only appears on the icon if the panel has established a connection with a currently secured target Master, which requires a username and password.
DHCP/Static	Sets the panel to either DHCP or Static communication modes. • *DHCP (Dynamic Host Configuration Protocol)* assigns IP Addresses from client stations logging onto a TCP/IP network via a DHCP server. • *Static IP* is a permanent IP Address that is assigned to a node in a TCP/IP network.
IP Address	Sets the IP Address assigned to the panel.
Subnet Mask	Sets a subnetwork address to the panel. • *Subnetwork mask* is the technique used by the IP protocol to filter messages into a particular network segment (Subnet).
Gateway	Sets a gateway value to the panel. • *Gateway* is a computer that either performs protocol conversion between different types of networks/applications or acts as a go-between two or more networks that use the same protocols.
Host Name	Sets the host name of the panel.
Primary DNS	Sets the address of the primary DNS server used for host name lookups. • *DNS (Domain Name System)* is software that lets users locate computers on a local network or the Internet (TCP/IP network) by host and domain. The DNS server maintains a database of host names for its domain and their corresponding IP Addresses.
Secondary DNS	Sets a secondary DNS value to the panel.

System Settings Page - IP Tab Elements (Cont.)	
Domain	Sets the unique name on the Internet to the panel for DNS look-up. • The panel belongs to the DNS domain.
Ethernet Mode	Sets the speed of the Ethernet connection to the panel. • Choices are: **Auto**, **10 Half Duplex**, **10 Full Duplex**, **100 Half Duplex,** or **100 Full Duplex.**
MAC Address	Displays a read-only field that is factory set by AMX for the built-in Ethernet interface.
Save & Reboot:	Saves any changes and reboots the device in order to implement those changes.
Cancel:	Returns to the previous page without saving any changes.

System Settings - Master Tab

The **Master** tab of the **System Settings** page contains the necessary information for connecting to the network Master.

FIG. 17 System Settings page - Master Tab

The elements of the *System Settings* page - **Master** Tab are as follows:

System Settings Page - Master Tab Elements	
Connection Status icon:	This visual display of the connection status allows the user to have a current visual update of the panel's connection status, regardless of what page is currently active. • A Lock only appears on the icon if the panel has established a connection with a currently secured target Master, which requires a username and password.
Type:	Sets the NetLinx Master to communicate with the panel via Ethernet. This is based on the cable connection from the rear. • *Ethernet* is a CAT-5 cable (10/100Base T terminated in an RJ-45 connector) used to network computers together and is used in most LAN (local area networks).
Mode:	Cycles between the different connection modes (URL, Listen, NDP(UDP), URL(UDP), and Auto): • **Auto** - In this mode, enter the System Number and a username/password (if applicable). This mode is used when both the panel and the NetLinx Master are on the same Subnet and the Master has its UDP feature enabled. The Master IP/URL field is read-only because the panel obtains this information from the communicating Master. • **URL** - In this mode, enter the Master IP/URL, Master Port Number, and username/password (if used) on the Master. The System Number field is read-only. • **Listen** - In this mode, add the Modero panel address into the URL List in NetLinx Studio and set the connection mode to Listen. This mode allows the Modero touch panel to "listen" for the Master's communication signals. The System Number and Master IP/URL fields are read-only. • **NDP(UDP) -** This mode uses UDP instead of TCP to access the device. The System Number and Master IP/URL fields are read-only. • **URL(UDP) -** This mode uses UDP instead of TCP to access the device. The System number field is read-only.

System Settings Page - Master Tab Elements	
System Number:	Allows you to enter a system number. Default value is 0 (zero).
Master IP/URL:	Sets the Master IP or URL of the NetLinx Master. This field is only enabled when selecting either the URL or the URL(UDP) Modes.
Master Port Number:	Enters the port number used with the NetLinx Master. • Default value is 1319.
Username/Password:	If the target Master has been previously secured, enter the alphanumeric string (into each field) assigned to a pre-configured user profile on the Master. This profile should have the pre-defined level of access/configuration rights.
NDP Name:	The Nexus Delivery Protocol name for the device. The NDP name allows use of a master web interface, NetLinx Studio 2.4 or commands to bind the device with NetLinx masters.
Save & Reboot:	Saves any changes and reboots the device in order to implement those changes.
Cancel:	Returns to the previous page without saving any changes.

G4 Web Control Page

The *G4 Web Control* page (FIG. 18) centers around enabling and disabling both the display and control of your panel via the Web. An external computer or Netbook running a VNC client such as Bonjour, installed during the initial communication to the G4 panel, makes this possible.

FIG. 18 G4 Web Control Settings page

The NXV-300 supports the open standard Virtual Network Computing (VNC) interface. This device contains a VNC server that allows it to accept a connection from any other device running a VNC client. Once a connection is established to that target device, the client can control the device remotely. The elements of the G4 Web Control Settings page are as follows:

G4 Web Control Settings Page Elements	
Connection Status icon:	This visual display of the connection status allows the user to have a current visual update of the panel's connection status regardless of what page is currently active. • A Lock only appears on the icon if the panel has established a connection with a currently secured target Master (*requiring a username and password*).
G4 Web Control Settings: Enabled	Sets the remote control values for the touch panel and contains: • The **Enabled** button activates the G4 Web Control feature on the panel and allows an external PC running a VNC client to access the panel after the remaining fields are configured. This button is always on.
Timeout:	Sets the length of time (in minutes) the panel can remain idle (no cursor movements) before the session is closed and the user is disconnected. • Minimum value = 0 minutes (panel never times-out) • Maximum value = 240 minutes (panel times-out after 240 minutes/4hours)
Network Interface	Displays the detected method of communication to the web: • **Wired** is used when a direct Ethernet connection is being used for communication to the web. *This is the only setting.*

G4 Web Control Page Elements (Cont.)	
Control Name	The Control Name is the same name as the Device Name set in the Protected Setup Pages. The Control Name cannot be changed. This Web Control tab displays a G4 icon alongside the link to the Web Control Name given to this panel (FIG. 18).
Control Password	Allows entry of the G4 Authentication session password associated for VNC web access of this panel.
Control Port	Allows entry of the VNC Web Server's port value. • Default value is 5900.
Max Connects	This field displays the maximum number of users that can be connected simultaneously to the target panel via the Web. Click on the field to change the maximum number. • Default value is 1.
Connect Count	This read-only field displays the current number of users connected to the target panel via the Web. *This value cannot exceed the Maximum number field.*
Back:	Saves the changes and returns to the previously active touch panel page.

Password Page

The options on the *Password* page (FIG. 19) allow you to assign the passwords required for users to access the *Protected Setup* page.

FIG. 19 Password page

Features on this page include:

Password Page	
Connection Status icon:	The icon in the upper-right corner of each Setup page shows online/offline state of the panel to the master. • Bright red - disconnected • Bright green - connected. Blinks when a blink message is received to dark green every 5 seconds for half a second then go back to bright green. • Bright yellow - panel missed a blink message from the master. It will remain yellow for 3 missed blink messages and then turn red. It will return to green when a blink message is received. ***Note**: a Lock appears on the icon if the panel is connected to a secured NetLinx Master.*
In Panel Password Change:	Accesses the alphanumeric values associated to particular password sets. • The PASSWORD 1, 2, 3, 4 and 5 (protected) buttons open a keyboard to enter alphanumeric values associated to the selected password group. ***Note**: Clearing Password #5 removes the need to enter a password before accessing the Protected Setup page.*
Back:	Saves all changes and returns to the previous page.

Panel Statistics Page

The options on the *Panel Statistics* page allow you to track the connection status for the panel. The *Panel Statistics* page tracks ICSP messages and Blink messages statistics (FIG. 20). Select between the **ICSP** and **Blinks** tabs to view the appropriate information.

Panel Statistics - ICSP Tab

FIG. 20 Panel Statistics Page - ICSP Tab

The **ICSP** Tab tracks messages between the master and the touch panel, as ICSP is the protocol they use to communicate with each other. Features on this tab are as follows:

Panel Statistics Page - ICSP Tab Elements	
Connection Status icon:	The icon in the upper-right corner of each Setup page shows online/offline state of the panel to the master. • Bright red - disconnected • Bright green - connected. Blinks when a blink message is received to dark green every 5 seconds for half a second then go back to bright green. • Bright yellow - panel missed a blink message from the master. It will remain yellow for 3 missed blink messages and then turn red. It will return to green when a blink message is received. ***Note**: a Lock appears on the icon if the panel is connected to a secured NetLinx Master.*
Total	• **Received -** The total ICSP messages received by the panel. • **Processed -** The total ICSP messages processed by the panel. • **Dropped -** The total ICSP messages dropped by the panel.
Last 15 Minutes	• **Received -** The total ICSP messages received by the panel in the last 15 minutes. • **Processed -** The total ICSP messages processed by the panel in the last 15 minutes. • **Dropped -** The total ICSP messages dropped by the panel in the last 15 minutes.
Clear	This button resets all panel statistics on this page.
Refresh	This button refreshes all panel statistics to the values recorded at the moment the button is pressed.
Back:	Returns to the previous page.

Panel Statistics - Blinks Tab

FIG. 21 Panel Statistics Page - Blinks Tab

The **Blinks** Tab tracks blinks, which are messages sent by the master once every 5 seconds to all connected devices. Features on this tab are as follows:

Panel Statistics Page - Blinks Tab Elements	
Connection Status icon:	The icon in the upper-right corner of each Setup page shows online/offline state of the panel to the master. • Bright red - disconnected • Bright green - connected. Blinks when a blink message is received to dark green every 5 seconds for half a second then go back to bright green. • Bright yellow - panel missed a blink message from the master. It will remain yellow for 3 missed blink messages and then turn red. It will return to green when a blink message is received. ***Note**: a Lock appears on the icon if the panel is connected to a secured NetLinx Master.*
Total:	• **Received -** The total Blink messages received by the panel. • **Missed -** The total Blink messages missed by the panel.
Last 15 Minutes:	• **Received -** The total Blink messages received by the panel in the last 15 minutes. • **Missed -** The total Blink messages missed by the panel in the last 15 minutes.
Clear:	Pressing this button clears all fields on this page.
Refresh:	Pressing this button refreshes all data in the fields on this page.
Back:	Returns to the previous page.

Connection Utility

The *Connection Utility* Page (FIG. 22) opens directly over the *Protected Setup* Page. Use this page to access the connection information for the panel, such as the panel IP address.

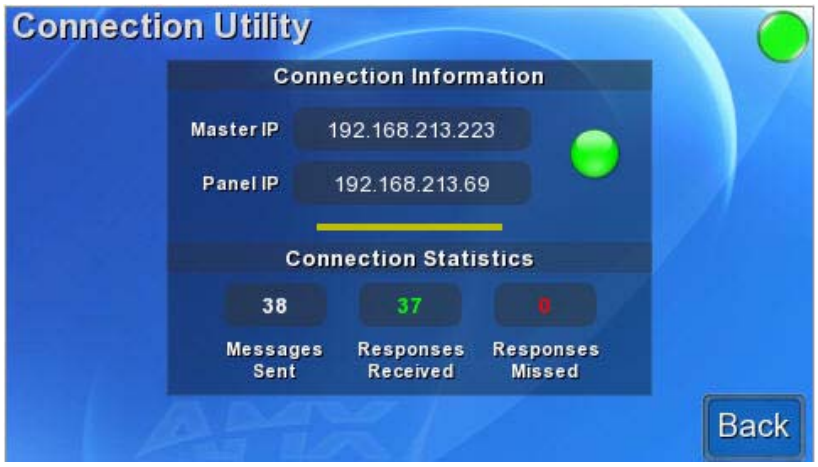

FIG. 22 Connection Utility Page

Features on this page are as follows:

Connection Utility Page	
Connection Status icon:	The icon in the upper-right corner of the utility provides a constant visual indication of current connection status. A message is sent to the master once per second and expects a response. • If it is received, the button stays green. • If it is missed, the button goes yellow. • After three misses (3 seconds), it will go red until a response from the master is received, and then it will be green again.
Connection Information	
Master IP	The IP Address for the connected master.
Panel IP	The IP Address for the panel.
Connection Statistics	
Messages Sent	The number of messages sent from the panel to the master.
Responses Received	The number of responses the panel has received from the master.
Responses Missed	The number of expected responses from the master to the panel missed.
Back:	Returns to the *Protected Settings* Page.

NetLinx Programming

The NXV-300 may be programmed, using the commands in this section, to perform a wide variety of operations using Send_Commands and variable text commands.

A device must first be defined in the NetLinx programming language with values for the Device: Port: System (in all programming examples - ***Panel*** is used in place of these values and represents all Modero panels).

Verify that you are using the latest NetLinx Master and Modero firmware, and verify that you are using the latest version of NetLinx Studio and TPD4.

Button Assignments

- Button Channel Range: 1 - 4000 Button push and Feedback (per address port)
- Button Variable Text range: 1 - 4000 (per address port)
- Button States Range: 1 - 256 (0 = All states, for General buttons 1 = Off state and 2 = On state).
- Level Range: 1 - 600 (Default level value 0 - 255, can be set up to 1 - 65535)
- Address port Range: 1 - 100

These button assignments can only be adjusted in TPD4 and not on the panels themselves.

Page Commands

These Page Commands are used in NetLinx Programming Language and are case insensitive.

Page Commands	

@APG	Add the popup page to a group if it does not already exist. If the new popup is added to a group which has a popup displayed on the current page along with the new pop-up, the displayed popup will be hidden and the new popup will be displayed.
	Syntax:
	`"'@APG-<popup page name>;<popup group name>'"`
	Variable:
	popup page name = 1 - 50 ASCII characters. Name of the popup page.
	popup group name = 1 - 50 ASCII characters. Name of the popup group.
	Example:
	`SEND_COMMAND Panel,"'@APG-Popup1;Group1'"`
	Adds the popup page 'Popup1' to the popup group 'Group1'.

@CPG	Clear all popup pages from specified popup group.
	Syntax:
	`"'@CPG-<popup group name>'"`
	Variable:
	popup group name = 1 - 50 ASCII characters. Name of the popup group.
	Example:
	`SEND_COMMAND Panel,"'@CPG-Group1'"`
	Clears all popup pages from the popup group 'Group1'.

Page Commands (Cont.)	

@DPG	Delete a specific popup page from specified popup group if it exists.
	Syntax:
	`"'@DPG-<popup page name>;<popup group name>'"`
	Variable:
	popup page name = 1 - 50 ASCII characters. Name of the popup page.
	popup group name = 1 - 50 ASCII characters. Name of the popup group.
	Example:
	`SEND_COMMAND Panel,"'@DPG-Popup1;Group1'"`
	Deletes the popup page 'Popup1' from the popup group 'Group1'.

@PDR	Set the popup location reset flag. If the flag is set, the popup will return to its default location on show instead of its last drag location.
	Syntax:
	`"'@PDR-<popup page name>;<reset flag>'"`
	Variable:
	popup page name = 1 - 50 ASCII characters. Name of the page the popup is displayed On.
	reset flag = 1 = Enable reset flag
	0 = Disable reset flag
	Example:
	`SEND_COMMAND Panel,"'@PDR-Popup1;1'"`
	Popup1 will return to its default location when turned On.

@PHE	Set the hide effect for the specified popup page to the named hide effect.
	Syntax:
	`"'@PHE-<popup page name>;<hide effect name>'"`
	Variable:
	popup page name = 1 - 50 ASCII characters. Name of the page the popup is displayed On.
	hide effect name = Refers to the popup effect names being used.
	Example:
	`SEND_COMMAND Panel,"'@PHE-Popup1;Slide to Left'"`
	Sets the Popup1 hide effect name to 'Slide to Left'.

@PHP	Set the hide effect position. Only 1 coordinate is ever needed for an effect; however, the command will specify both. This command sets the location at which the effect will end at.
	Syntax:
	`"'@PHP-<popup page name>;<x coordinate>,<y coordinate>'"`
	Variable:
	popup page name = 1 - 50 ASCII characters. Name of the page the popup is displayed On.
	Example:
	`SEND_COMMAND Panel,"'@PHP-Popup1;75,0'"`
	Sets the Popup1 hide effect x-coordinate value to 75 and the y-coordinate value to 0.

@PHT	Set the hide effect time for the specified popup page.
	Syntax:
	`"'@PHT-<popup page name>;<hide effect time>'"`
	Variable:
	popup page name = 1 - 50 ASCII characters. Name of the page the popup is displayed On.
	hide effect time = Given in 1/10ths of a second.
	Example:
	`SEND_COMMAND Panel,"'@PHT-Popup1;50'"`
	Sets the Popup1 hide effect time to 5 seconds.

Page Commands (Cont.)	

@PPA	Close all popups on a specified page. *If the page name is empty, the current page is used.* Same as the 'Clear Page' command in TPDesign4.
	Syntax:
	`"'@PPA-<page name>'"`
	Variable:
	page name = 1 - 50 ASCII characters. Name of the page the popup is displayed On.
	Example:
	`SEND_COMMAND Panel,"'@PPA-Page1'"`
	Close all popups on Page1.

@PPF	Deactivate a specific popup page on either a specified page or the current page. *If the page name is empty, the current page is used (see example 2).* If the popup page is part of a group, the whole group is deactivated. This command works in the same way as the 'Hide Popup' command in TPDesign4.
	Syntax:
	`"'@PPF-<popup page name>;<page name>'"`
	Variable:
	popup page name = 1 - 50 ASCII characters. Name of the popup page.
	page name = 1 - 50 ASCII characters. Name of the page the popup is displayed On.
	Example:
	`SEND_COMMAND Panel,"'@PPF-Popup1;Main'"`
	Deactivates the popup page 'Popup1' on the Main page.
	Example 2:
	`SEND_COMMAND Panel,"'@PPF-Popup1'"`
	Deactivates the popup page 'Popup1' on the current page.

@PPG	Toggle a specific popup page on either a specified page or the current page. *If the page name is empty, the current page is used (see example 2).* Toggling refers to the activating/deactivating (On/Off) of a popup page. This command works in the same way as the 'Toggle Popup' command in TPDesign4.
	Syntax:
	`"'@PPG-<popup page name>;<page name>'"`
	Variable:
	popup page name = 1 - 50 ASCII characters. Name of the popup page.
	page name = 1 - 50 ASCII characters. Name of the page the popup is displayed On.
	Example:
	`SEND_COMMAND Panel,"'@PPG-Popup1;Main'"`
	Toggles the popup page 'Popup1' on the 'Main' page from one state to another (On/Off).
	Example 2:
	`SEND_COMMAND Panel,"'@PPG-Popup1'"`
	Toggles the popup page 'Popup1' on the current page from one state to another (On/Off).

@PPK	Kill a specific popup page from all pages. Kill refers to the deactivating (Off) of a popup window from all pages. If the pop-up page is part of a group, the whole group is deactivated. This command works in the same way as the 'Clear Group' command in TPDesign 4.
	Syntax:
	`"'@PPK-<popup page name>'"`
	Variable:
	popup page name = 1 - 50 ASCII characters. Name of the popup page.
	Example:
	`SEND_COMMAND Panel,"'@PPK-Popup1'"`
	Kills the popup page 'Popup1' on all pages.

Page Commands (Cont.)	

@PPM	Set the modality of a specific popup page to Modal or Non Modal. A Modal popup page, when active, only allows use of the buttons and features on that popup page. All other buttons on the panel page are inactivated.
	Syntax:
	`"'@PPM-<popup page name>;<mode>'"`
	Variable:
	popup page name = 1 - 50 ASCII characters. Name of the popup page.
	mode = NONMODAL converts a previously Modal popup page to a Non Modal.
	MODAL converts a previously Non Modal popup page to Modal.
	modal = 1 and non-modal = 0
	Example:
	`SEND_COMMAND Panel,"'@PPM-Popup1;Modal'"`
	Sets the popup page 'Popup1' to Modal.
	`SEND_COMMAND Panel,"'@PPM-Popup1;1'"`
	Sets the popup page 'Popup1' to Modal.

@PPN	Activate a specific popup page to launch on either a specified page or the current page. *If the page name is empty, the current page is used (see example 2). If the popup page is already on, do not re-draw it. This command works in the same way as the 'Show Popup' command in TPDesign4.*
	Syntax:
	`"'@PPN-<popup page name>;<page name>'"`
	Variable:
	popup page name = 1 - 50 ASCII characters. Name of the popup page.
	page name = 1 - 50 ASCII characters. Name of the page the popup is displayed On.
	Example:
	`SEND_COMMAND Panel,"'@PPN-Popup1;Main'"`
	Activates 'Popup1' on the 'Main' page.
	Example 2:
	`SEND_COMMAND Panel,"'@PPN-Popup1'"`
	Activates the popup page 'Popup1' on the current page.

@PPT	Set a specific popup page to timeout within a specified time. If timeout is empty, the popup page will clear the timeout.
	Syntax:
	`"'@PPT-<popup page name>;<timeout>'"`
	Variable:
	popup page name = 1 - 50 ASCII characters. Name of the popup page.
	timeout = Timeout duration in 1/10ths of a second.
	Example:
	`SEND_COMMAND Panel,"'@PPT-Popup1;30'"`
	Sets the popup page 'Popup1' to timeout within 3 seconds.

@PPX	Close all popups on all pages. This command works in the same way as the 'Clear All' command in TPDesign 4.
	Syntax:
	`"'@PPX'"`
	Example:
	`SEND_COMMAND Panel,"'@PPX'"`
	Close all popups on all pages.

Page Commands (Cont.)	

@PSE	Set the show effect for the specified popup page to the named show effect.
	Syntax:
	`"'@PSE-<popup page name>;<show effect name>'"`
	Variable:
	popup page name = 1 - 50 ASCII characters. Name of the page the popup is displayed On.
	show effect name = Refers to the popup effect name being used.
	Example:
	`SEND_COMMAND Panel,"'@PSE-Popup1;Slide from Left'"`
	Sets the Popup1 show effect name to 'Slide from Left'.

@PSP	Set the show effect position. Only 1 coordinate is ever needed for an effect; however, the command will specify both. This command sets the location at which the effect will begin at.
	Syntax:
	`"'@PSP-<popup page name>;<x coordinate>,<y coordinate>'"`
	Variable:
	popup page name = 1 - 50 ASCII characters. Name of the page the popup is displayed On.
	Example:
	`SEND_COMMAND Panel,"'@PSP-Popup1;100,0'"`
	Sets the Popup1 show effect x-coordinate value to 100 and the y-coordinate value to 0.

@PST	Set the show effect time for the specified popup page.
	Syntax:
	`"'@PST-<popup page name>;<show effect time>'"`
	Variable:
	popup page name = 1 - 50 ASCII characters. Name of the page the popup is displayed On.
	show effect time = Given in 1/10ths of a second.
	Example:
	`SEND_COMMAND Panel,"'@PST-Popup1;50'"`
	Sets the Popup1 show effect time to 5 seconds.

PAGE	Flips to a page with a specified page name. If the page is currently active, it will not redraw the page.
	Syntax:
	`"'PAGE-<page name>'"`
	Variable:
	page name = 1 - 50 ASCII characters. Name of the page the popup is displayed On.
	Example:
	`SEND_COMMAND Panel,"'PAGE-Page1'"`
	Flips to page1.

PPOF	Deactivate a specific popup page on either a specified page or the current page. *If the page name is empty, the current page is used (see example 2).* If the popup page is part of a group, the whole group is deactivated. This command works in the same way as the 'Hide Popup' command in TPDesign4.
	Syntax:
	`"'PPOF-<popup page name>;<page name>'"`
	Variable:
	popup page name = 1 - 50 ASCII characters. Name of the popup page.
	page name = 1 - 50 ASCII characters. Name of the page the popup is displayed On.
	Example:
	`SEND_COMMAND Panel,"'PPOF-Popup1;Main'"`
	Deactivates the popup page 'Popup1' on the Main page.
	Example 2:
	`SEND_COMMAND Panel,"'PPOF-Popup1'"`
	Deactivates the popup page 'Popup1' on the current page.

Page Commands (Cont.)	

PPOG	Toggle a specific popup page on either a specified page or the current page. *If the page name is empty, the current page is used (see example 2).* Toggling refers to the activating/deactivating (On/Off) of a popup page. This command works in the same way as the 'Toggle Popup' command in TPDesign4.
	Syntax:
	`"'PPOG-<popup page name>;<page name>'"`
	Variable:
	popup page name = 1 - 50 ASCII characters. Name of the popup page.
	page name = 1 - 50 ASCII characters. Name of the page the popup is displayed On.
	Example:
	`SEND_COMMAND Panel,"'PPOG-Popup1;Main'"`
	Toggles the popup page 'Popup1' on the Main page from one state to another (On/Off).
	Example 2:
	`SEND_COMMAND Panel,"'PPOG-Popup1'"`
	Toggles the popup page 'Popup1' on the current page from one state to another (On/Off).

PPON	Activate a specific popup page to launch on either a specified page or the current page. *If the page name is empty, the current page is used (see example 2).* If the popup page is already On, do not re-draw it. This command works in the same way as the 'Show Popup' command in TPDesign4.
	Syntax:
	`"'PPON-<popup page name>;<page name>'"`
	Variable:
	popup page name = 1 - 50 ASCII characters. Name of the popup page.
	page name = 1 - 50 ASCII characters. Name of the page the popup is displayed On.
	Example:
	`SEND_COMMAND Panel,"'PPON-Popup1; Main'"`
	Activates the popup page 'Popup1' on the Main page.
	Example 2:
	`SEND_COMMAND Panel,"'PPON-Popup1'"`
	Activates the popup page 'Popup1' on the current page.

Programming Numbers for Colors, Fonts, and Borders

Colors can be used to set the colors on buttons, sliders, and pages. The lowest color number represents the lightest color-specific display and the highest number represents the darkest display. For example, 0 represents very light red, and 5 is very dark red.

RGB Triplets and Names For Basic 88 Colors

RGB Values for all 88 Basic Colors				
Index No.	Name	Red	Green	Blue
00	Very Light Red	255	0	0
01	Light Red	223	0	0
02	Red	191	0	0
03	Medium Red	159	0	0
04	Dark Red	127	0	0
05	Very Dark Red	95	0	0
06	Very Light Orange	255	128	0
07	Light Orange	223	112	0
08	Orange	191	96	0
09	Medium Orange	159	80	0
10	Dark Orange	127	64	0
11	Very Dark Orange	95	48	0
12	Very Light Yellow	255	255	0
13	Light Yellow	223	223	0
14	Yellow	191	191	0
15	Medium Yellow	159	159	0
16	Dark Yellow	127	127	0
17	Very Dark Yellow	95	95	0
18	Very Light Lime	128	255	0
19	Light Lime	112	223	0
20	Lime	96	191	0
21	Medium Lime	80	159	0
22	Dark Lime	64	127	0
23	Very Dark Lime	48	95	0
24	Very Light Green	0	255	0
25	Light Green	0	223	0
26	Green	0	191	0
27	Medium Green	0	159	0
28	Dark Green	0	127	0
29	Very Dark Green	0	95	0
30	Very Light Mint	0	255	128
31	Light Mint	0	223	112
32	Mint	0	191	96
33	Medium Mint	0	159	80
34	Dark Mint	0	127	64
35	Very Dark Mint	0	95	48
36	Very Light Cyan	0	255	255
37	Light Cyan	0	223	223
38	Cyan	0	191	191
39	Medium Cyan	0	159	159
40	Dark Cyan	0	127	127
41	Very Dark Cyan	0	95	95
42	Very Light Aqua	0	128	255

RGB Values for all 88 Basic Colors (Cont.)				
Index No.	Name	Red	Green	Blue
43	Light Aqua	0	112	223
44	Aqua	0	96	191
45	Medium Aqua	0	80	159
46	Dark Aqua	0	64	127
47	Very Dark Aqua	0	48	95
48	Very Light Blue	0	0	255
49	Light Blue	0	0	223
50	Blue	0	0	191
51	Medium Blue	0	0	159
52	Dark Blue	0	0	127
53	Very Dark Blue	0	0	95
54	Very Light Purple	128	0	255
55	Light Purple	112	0	223
56	Purple	96	0	191
57	Medium Purple	80	0	159
58	Dark Purple	64	0	127
59	Very Dark Purple	48	0	95
60	Very Light Magenta	255	0	255
61	Light Magenta	223	0	223
62	Magenta	191	0	191
63	Medium Magenta	159	0	159
64	Dark Magenta	127	0	127
65	Very Dark Magenta	95	0	95
66	Very Light Pink	255	0	128
67	Light Pink	223	0	112
68	Pink	191	0	96
69	Medium Pink	159	0	80
70	Dark Pink	127	0	64
71	Very Dark Pink	95	0	48
72	White	255	255	255
73	Grey1	238	238	238
74	Grey3	204	204	204
75	Grey5	170	170	170
76	Grey7	136	136	136
77	Grey9	102	102	102
78	Grey4	187	187	187
79	Grey6	153	153	153
80	Grey8	119	119	119
81	Grey10	85	85	85
82	Grey12	51	51	51
83	Grey13	34	34	34
84	Grey2	221	221	221
85	Grey11	68	68	68
86	Grey14	17	17	17

RGB Values for all 88 Basic Colors (Cont.)				
Index No.	Name	Red	Green	Blue
87	Black	0	0	0
255	TRANSPARENT	99	53	99

Font Styles and ID Numbers

Font styles can be used to program the text fonts on buttons, sliders, and pages. The following chart shows the default font type and their respective ID numbers generated by TPDesign4.

Default Font Styles and ID Numbers					
Font ID #	Font type	Size	Font ID #	Font type	Size
1	Courier New	9	19	Arial	9
2	Courier New	12	20	Arial	10
3	Courier New	18	21	Arial	12
4	Courier New	26	22	Arial	14
5	Courier New	32	23	Arial	16
6	Courier New	18	24	Arial	18
7	Courier New	26	25	Arial	20
8	Courier New	34	26	Arial	24
9	AMX Bold	14	27	Arial	36
10	AMX Bold	20	28	Arial Bold	10
11	AMX Bold	36	29	Arial Bold	8
			32 - Variable Fonts start at 32.		

NOTE

*Fonts must be imported into a TPDesign4 project file. The font ID numbers are assigned by TPDesign4. These values are also listed in the **Generate Programmer's Report**.*

Border Styles And Programming Numbers

Border styles may be used to program borders on buttons, sliders, and popup pages.

Border Styles and Programming Numbers			
No.	Border styles	No.	Border styles
0-1	No border	10-11	Picture frame
2	Single line	12	Double line
3	Double line	20	Bevel-S
4	Quad line	21	Bevel-M
5-6	Circle 15	22-23	Circle 15
7	Single line	24-27	Neon inactive-S
8	Double line	40-41	Diamond 55
9	Quad line		

The TPDesign4 Touch Panel Design program has pre-set border styles that are user-selectable.

The following number values may not be used for programming purposes when changing border styles. TPD4 border styles may ONLY be changed by using the name.

TPD4 Border Styles by Name			
No.	Border styles	No.	Border styles
1	None	27	Cursor Bottom
2	AMX Elite -L	28	Cursor Bottom with Hole
3	AMX Elite -M	29	Cursor Top
4	AMX Elite -S	30	Cursor Top with Hole
5	Bevel -L	31	Cursor Left
6	Bevel -M	32	Cursor Left with Hole
7	Bevel -S	33	Cursor Right
8	Circle 15	34	Cursor Right with Hole
9	Circle 25	35	Custom Frame
10	Circle 35	36	Diamond 15
11	Circle 45	37	Diamond 25
12	Circle 55	38	Diamond 35
13	Circle 65	39	Diamond 45
14	Circle 75	40	Diamond 55
15	Circle 85	41	Diamond 65
16	Circle 95	42	Diamond 75
17	Circle 105	43	Diamond 85
18	Circle 115	44	Diamond 95
19	Circle 125	45	Diamond 105
20	Circle 135	46	Diamond 115
21	Circle 145	47	Diamond 125
22	Circle 155	48	Diamond 135
23	Circle 165	49	Diamond 145
24	Circle 175	50	Diamond 155
25	Circle 185	51	Diamond 165
26	Circle 195	52	Diamond 175
53	Diamond 185	97	Menu Bottom Rounded 185
54	Diamond 195	98	Menu Bottom Rounded 195
55	Double Bevel -L	99	Menu Top Rounded 15
56	Double Bevel -M	100	Menu Top Rounded 25
57	Double Bevel -S	101	Menu Top Rounded 35
58	Double Line	102	Menu Top Rounded 45
59	Fuzzy	103	Menu Top Rounded 55
60	Glow-L	104	Menu Top Rounded 65
61	Glow-S	105	Menu Top Rounded 75
62	Help Down	106	Menu Top Rounded 85
63	Neon Active -L	107	Menu Top Rounded 95
64	Neon Active -S	108	Menu Top Rounded 105
65	Neon Inactive -L	109	Menu Top Rounded 115
66	Neon Inactive -S	110	Menu Top Rounded 125
67	Oval H 60x30	111	Menu Top Rounded 135

TPD4 Border Styles by Name (Cont.)			
No.	Border styles	No.	Border styles
68	Oval H 100x50	112	Menu Top Rounded 145
69	Oval H 150x75	113	Menu Top Rounded 155
70	Oval H 200x100	114	Menu Top Rounded 165
71	Oval V 30x60	115	Menu Top Rounded 175
72	Oval V 50x100	116	Menu Top Rounded 185
73	Oval V 75x150	117	Menu Top Rounded 195
74	Oval V 100x200	118	Menu Right Rounded 15
75	Picture Frame	119	Menu Right Rounded 25
76	Quad Line	120	Menu Right Rounded 35
77	Single Line	121	Menu Right Rounded 45
78	Windows Style Popup	122	Menu Right Rounded 55
79	Windows Style Popup (Status Bar)	123	Menu Right Rounded 65
80	Menu Bottom Rounded 15	124	Menu Right Rounded 75
81	Menu Bottom Rounded 25	125	Menu Right Rounded 85
82	Menu Bottom Rounded 35	126	Menu Right Rounded 95
83	Menu Bottom Rounded 45	127	Menu Right Rounded 105
84	Menu Bottom Rounded 55	128	Menu Right Rounded 115
85	Menu Bottom Rounded 65	129	Menu Right Rounded 125
86	Menu Bottom Rounded 75	130	Menu Right Rounded 135
87	Menu Bottom Rounded 85	131	Menu Right Rounded 145
88	Menu Bottom Rounded 95	132	Menu Right Rounded 155
89	Menu Bottom Rounded 105	133	Menu Right Rounded 165
90	Menu Bottom Rounded 115	134	Menu Right Rounded 175
91	Menu Bottom Rounded 125	135	Menu Right Rounded 185
92	Menu Bottom Rounded 135	136	Menu Right Rounded 195
93	Menu Bottom Rounded 145	137	Menu Left Rounded 15
94	Menu Bottom Rounded 155	138	Menu Left Rounded 25
95	Menu Bottom Rounded 165	139	Menu Left Rounded 35
96	Menu Bottom Rounded 175	140	Menu Left Rounded 45

TPD4 Border Styles by Name (Cont.)			
No.	Border styles	No.	Border styles
141	Menu Left Rounded 55	149	Menu Left Rounded 135
142	Menu Left Rounded 65	150	Menu Left Rounded 145
143	Menu Left Rounded 75	151	Menu Left Rounded 155
144	Menu Left Rounded 85	152	Menu Left Rounded 165
145	Menu Left Rounded 95	153	Menu Left Rounded 175
146	Menu Left Rounded 105	154	Menu Left Rounded 185
147	Menu Left Rounded 115	155	Menu Left Rounded 195
148	Menu Left Rounded 125		

"^" Button Commands

These Button Commands are used in NetLinx Studio and are case insensitive.

All commands that begin with "^" have the capability of assigning a variable text address range and button state range. **A device must first be defined in the NetLinx programming language with values for the Device: Port: System** (in all programming examples - ***Panel*** is used in place of these values).

- **Variable text ranges** allow you to target 1 or more variable text channels in a single command.
- **Button State ranges** allow you to target 1 or more states of a variable text button with a single command.
- **"."** Character is used for the 'through' notation, also the "**&**" character is used for the 'And' notation.

"^" Button Commands	

^ANI	Run a button animation (in 1/10 second).
	Syntax:
	`"'^ANI-<vt addr range>,<start state>,<end state>,<time>'"`
	Variable:
	variable text address range = 1 - 4000.
	start state = Beginning of button state (0= current state).
	end state = End of button state.
	time = In 1/10 second intervals.
	Example:
	`SEND_COMMAND Panel,"'^ANI-500,1,25,100'"`
	Runs a button animation at text range 500 from state 1 to state 25 for 10 second.

^APF	Add page flip action to a button if it does not already exist.
	Syntax:
	`"'^APF-<vt addr range>,<page flip action>,<page name>'"`
	Variable:
	variable text address range = 1 - 4000.
	page flip action = **Stan**[dardPage] - Flip to standard page
	Prev[iousPage] - Flip to previous page
	Show[Popup] - Show Popup page
	Hide[Popup] - Hide Popup page
	Togg[lePopup] - Toggle popup state
	ClearG[roup] - Clear popup page group from all pages
	ClearP[age] - Clear all popup pages from a page with the specified page name
	ClearA[ll] - Clear all popup pages from all pages
	page name = 1 - 50 ASCII characters.
	Example:
	`SEND COMMAND Panel,"'^APF-400,Stan,Main Page'"`
	Assigns a button to a standard page flip with page name 'Main Page'.

^BAT	Append non-unicode text.
	Syntax:
	`"'^BAT-<vt addr range>,<button states range>,<new text>'"`
	Variable:
	variable text address range = 1 - 4000.
	button states range = 1 - 256 for multi-state buttons (0 = All states, for General buttons 1 = Off state and 2 = On state).
	new text = 1 - 50 ASCII characters.
	Example:
	`SEND_COMMAND Panel,"'^BAT-520,1,Enter City'"`
	Appends the text 'Enter City' to the button's OFF state.

"^" Button Commands (Cont.)	

^BAU	Append unicode text. Same format as ^UNI.
	Syntax:
	`"'^BAU-<vt addr range>,<button states range>,<unicode text>'"`
	Variable:
	variable text address range = 1 - 4000.
	button states range = 1 - 256 for multi-state buttons (0 = All states, for General buttons 1 = Off state and 2 = On state).
	unicode text = 1 - 50 ASCII characters. Unicode characters must be entered in Hex format.
	Example:
	`SEND_COMMAND Panel,"'^BAU-520,1,00770062'"`
	Appends Unicode text '00770062' to the button's OFF state.

^BCB	Set the border color to the specified color. **Only if** the specified border color is not the same as the current color.
	***Note**: Color can be assigned by color name (without spaces), number or R,G,B value (RRGGBB or RRGGBBAA).*
	Syntax:
	`"'^BCB-<vt addr range>,<button states range>,<color value>'"`
	Variable:
	variable text address range = 1 - 4000.
	button states range = 1 - 256 for multi-state buttons (0 = All states, for General buttons 1 = Off state and 2 = On state).
	color value = Refer to theRGB Values for all 88 Basic Colors table on page 29 for more information.
	Example:
	`SEND_COMMAND Panel,"'^BCB-500.504&510,1,12'"`
	Sets the Off state border color to 12 (Yellow). Colors can be set by Color Numbers, Color name, R,G,B,alpha colors (RRGGBBAA) and R, G & B colors values (RRGGBB).
	Refer to theRGB Values for all 88 Basic Colors table on page 29.

^BCF	Set the fill color to the specified color. **Only if** the specified fill color is not the same as the current color.
	***Note**: Color can be assigned by color name (without spaces), number or R,G,B value (RRGGBB or RRGGBBAA).*
	Syntax:
	`"'^BCF-<vt addr range>,<button states range>,<color value>'"`
	Variable:
	variable text address range = 1 - 4000.
	button states range = 1 - 256 for multi-state buttons (0 = All states, for General buttons 1 = Off state and 2 = On state).
	color value = Refer to theRGB Values for all 88 Basic Colors table on page 29 for more information.
	Example:
	`SEND_COMMAND Panel,"'^BCF-500.504&510.515,1,12'"`
	`SEND_COMMAND Panel,"'^BCF-500.504&510.515,1,Yellow'"`
	`SEND_COMMAND Panel,"'^BCF-500.504&510.515,1,#F4EC0A63''"`
	`SEND_COMMAND Panel,"'^BCF-500.504&510.515,1,#F4EC0A'"`
	Sets the Off state fill color by color number. Colors can be set by Color Numbers, Color name, R,G,B,alpha colors (RRGGBBAA) and R, G & B colors values (RRGGBB).

"^" Button Commands (Cont.)	

^BCT	Set the text color to the specified color. **Only if** the specified text color is not the same as the current color.
	***Note**: Color can be assigned by color name (without spaces), number or R,G,B value (RRGGBB or RRGGBBAA).*
	Syntax:
	`"'^BCT-<vt addr range>,<button states range>,<color value>'"`
	Variable:
	variable text address range = 1 - 4000.
	button states range = 1 - 256 for multi-state buttons (0 = All states, for General buttons 1 = Off state and 2 = On state).
	color value = Refer to theRGB Values for all 88 Basic Colors table on page 29 for more information.
	Example:
	`SEND_COMMAND Panel,"'^BCT-500.504&510,1,12'"`
	Sets the Off state border color to 12 (Yellow). Colors can be set by Color Numbers, Color name, R,G,B,alpha colors (RRGGBBAA) and R, G & B colors values (RRGGBB).

^BDO	Determines what order each layer of the button is drawn.
	Syntax:
	`"'^BDO-<vt addr range>,<button states range>,<1-5><1-5><1-5><1-5><1-5>'"`
	Variable:
	variable text address range = 1 - 4000.
	button states range = 1 - 256 for multi-state buttons (0 = All states, for General buttons 1 = Off state and 2 = On state).
	layer assignments = Fill Layer = 1
	Image Layer = 2
	Icon Layer = 3
	Text Layer = 4
	Border Layer = 5
	***Note**: The layer assignments are from bottom to top. The default draw order is* **12345**.
	Example:
	`SEND_COMMAND Panel,"'^BDO-530,1&2,51432'"`
	Sets the button's variable text 530 ON/OFF state draw order (from bottom to top) to Border, Fill, Text, Icon, and Image.
	Example 2:
	`SEND_COMMAND Panel,"'^BDO-1,0,12345'"`
	Sets all states of a button back to its default drawing order.

^BFB	Set the feedback type of the button. **ONLY works** on General-type buttons.
	Syntax:
	`"'^BFB-<vt addr range>,<feedback type>'"`
	Variable:
	variable text address range = 1 - 4000.
	feedback type = (None, Channel, Invert, On (Always on), Momentary, and Blink).
	Example:
	`SEND_COMMAND Panel,"'^BFB-500,Momentary'"`
	Sets the Feedback type of the button to 'Momentary'.

^BIM	Set the input mask for the specified address.
	Syntax:
	`"'^BIM-<vt addr range>,<input mask>'"`
	Variable:
	variable text address range = 1 - 4000.
	input mask = Refer to the for character types.
	Example:
	`SEND_COMMAND Panel,"'^BIM-500,AAAAAAAAAA'"`
	Sets the input mask to ten 'A' characters, that are required, to either a letter or digit **(entry is required).**

"^" Button Commands (Cont.)	

^BMC	Button copy command. Copy attributes of the source button to all the destination buttons.
	Note that the source is a single button state. Each state must be copied as a separate command. The <codes> section represents what attributes will be copied. All codes are 2 char pairs that can be separated by comma, space, percent or just ran together.
	Syntax:
	`"'^BMC-<vt addr range>,<button states range>,<source port>,<source address>,<source state>,<codes>'"`
	Variable:
	variable text address range = 1 - 4000.
	button states range = 1 - 256 for multi-state buttons (0 = All states, for General buttons 1 = Off state and 2 = On state).
	source port = 1 - 100.
	source address = 1 - 4000.
	source state = 1 - 256.
	codes: BM - Picture/Bitmap
	BR - Border
	CB - Border Color
	CF - Fill Color
	CT - Text Color
	EC - Text effect color
	EF - Text effect
	FT - Font
	IC - Icon
	JB - Bitmap alignment
	JI - Icon alignment
	JT - Text alignment
	OP - Opacity
	SO - Button Sound
	TX - Text
	WW - Word wrap on/off
	Example:
	`SEND_COMMAND Panel,"'^BMC-425,1,1,500,1,BR'"`
	or
	`SEND_COMMAND Panel,"'^BMC-425,1,1,500,1,%BR'"`
	Copies the OFF state border of button with a variable text address of 500 onto the OFF state border of button with a variable text address of 425.
	Example 2:
	`SEND_COMMAND Panel,"'^BMC-150,1,1,315,1,%BR%FT%TX%BM%IC%CF%CT'"`
	Copies the OFF state border, font, Text, bitmap, icon, fill color and text color of the button with a variable text address of 315 onto the OFF state border, font, Text, bitmap, icon, fill color and text color of the button with a variable text address of 150.

"^" Button Commands (Cont.)	
^BMF	Set any/all button parameters by sending embedded codes and data. Syntax: `"'^BMF-<vt addr range>,<button states range>,<data>'"` Variables: variable text address char array = 1 - 4000. button states range = 1 - 256 for multi-state buttons (0 = All states, for General buttons 1 = Off state and 2 = On state). level range = 1 - 600 (level value is 1 - 65535). data: '%B<border style>' = Set the border style name. See theBorder Styles and Programming Numbers table on page 31. '%B',<border 0-27,40,41> = Set the borer style number. See theBorder Styles and Programming Numbers table on page 31. '%DO<1-5><1-5><1-5><1-5><1-5> = Set the draw order. Listed from bottom to top. Refer to the ^BDO command on page 36 for more information. '%F',<font 1-8,10,11,20-29,32-xx> = Set the font. See theDefault Font Styles and ID Numbers table on page 31. '%F<font 01-08,10,11,20-29,32-xx>' = Set the font. See theDefault Font Styles and ID Numbers table on page 31. '%MI<mask image>' = Set the mask image. Refer to the ^BMI command on page 39 for more information. '%T<text >' = Set the text using ASCII characters (empty is clear). '%P<bitmap>' = Set the picture/bitmap filename (empty is clear). '%I',<icon 01-9900, 0-clear>' = Set the icon using values of 01 - 9900 (icon numbers are assigned in the TPDesign4 Resource Manager tab - Slots section). '%I<icon 01-9900, 0-clear>' = Set the icon using values of 01 - 9900 (icon numbers are assigned in the TPDesign4 Resource Manager tab - Slots section). '%J',<alignment of text 1-9> = As shown the following telephone keypad alignment chart: '%JT<alignment of text 0-9>' = As shown the above telephone keypad alignment chart, **BUT** the 0 (zero) is absolute and followed by **',<left>,<top>'** '%JB<alignment of bitmap/picture 0-9>' = As shown the above telephone keypad alignment chart BUT the 0 (zero) is absolute and followed by **',<left>,<top>'** '%JI<alignment of icon 0-9>' = As shown the above telephone keypad alignment chart, **BUT** the 0 (zero) is absolute and followed by **',<left>,<top>'** *For some of these commands and values, refer to* theRGB Values for all 88 Basic Colors table on page 29. '%CF<on fill color>' = Set Fill Color. '%CB<on border color>' = Set Border Color. '%CT<on text color>' = Set Text Color. '%SW<1 or 0>' = Show/hide a button. '%SO<sound>' = Set the button sound. '%EN<1 or 0>' = Enable/disable a button. '%WW<1 or 0>' = Word wrap On/Off. '%GH<bargraph hi>' = Set the bargraph upper limit. '%GL<bargraph low>' = Set the bargraph lower limit. '%GN<bargraph slider name>' = Set the bargraph slider name/Joystick cursor name. '%GC<bargraph slider color>' = Set the bargraph slider color/Joystick cursor color. '%GI<bargraph invert>' = Set the bargraph invert/noninvert or joystick coordinate (0,1,2,3). See the ^GIV command on page 45 for more information. '%GU<bargraph ramp up>' = Set the bargraph ramp up time in intervals of 1/10 second. '%GD<bargraph ramp down>' = Set the bargraph ramp down time in 1/10 second. '%GG<bargraph drag increment> = Set the bargraph drag increment. Refer to the ^GDI command on page 44 for more information.

"^" Button Commands (Cont.)	
^BMF (Cont.)	'%OT<feedback type>' = Set the Feedback (Output) Type to one of the following: None, Channel,Invert, ON (Always ON), Momentary, or Blink. '%SM' = Submit a text for text area button. '%SF<1 or 0>' = Set the focus for text area button. '%OP<0-255>' = Set the button opacity to either Invisible (value=0) or Opaque (value=255). '%OP#<00-FF>' = Set the button opacity to either Invisible (value=00) or Opaque (value=FF). '%UN<Unicode text>' = Set the Unicode text. See the^*UNI* section on page 48 for the text format. '%EF<text effect name>' = Set the text effect. '%EC<text effect color>' = Set the text effect color. '%ML<max length>' = Set the maximum length of a text area. '%MK<input mask>' = Set the input mask of a text area. '%VL<0-1>' = Log-On/Log-Off the computer control connection '%VN<network name>' = Set network connection name. '%VP<password>' = Set the network connection password. Example: `SEND_COMMAND Panel,"'^BMF-500,1,%B10%CFRed%CB Blue %CTBlack%Ptest.png'"` Sets the button OFF state as well as the Border, Fill Color, Border Color, Text Color, and Bitmap.

^BMI	Set the button mask image. Mask image is used to crop a borderless button to a non-square shape. This is typically used with a bitmap.
	Syntax:
	`"'^BMI-<vt addr range>,<button states range>,<mask image>'"`
	Variable:
	variable text address range = 1 - 4000.
	button states range = 1 - 256 for multi-state buttons (0 = All states, for General buttons 1 = Off state and 2 = On state).
	mask image = Graphic file used.
	Example:
	`SEND_COMMAND Panel,"'^BMI-530,1&2,newMac.png'"`
	Sets the button with variable text 530 ON/OFF state mask image to 'newmac.png'.
	`"'^BMI-<variable text address range>,<button states range>,<mask image>'"`
	Set the Chameleon Image button property. See Working With Chameleon Images in TPD4 Help.
	Note: *If the Border Style properties is set to something other than 'None', no visible change will occur. Setting the Border Style to 'None' via ^BOR or ^BMF..%B will reveal the Chameleon image.*
	Syntax:
	`SEND_COMMAND <DEV>,"'^BMI-<vt addr range>,<button states range>,<mask image>'"`
	Variables:
	variable text address range = 1 - 4000.
	button states range = 1 - 256 for multi-state buttons
	(0 = All states, for General buttons 1 = Off state and 2 = On state).
	mask image = Chameleon used.
	Example:
	`SEND_COMMAND Panel,"'^BMI-530,1&2,newMac.png'"`
	Sets the button with variable text 530 ON/OFF state mask image to 'newmac.png'.

"^" Button Commands (Cont.)	

^BML	Set the maximum length of the text area button. If this value is set to zero (0) there is no max length. The maximum length available is 2000. This is only for a Text area input button and not for a Text area input masking button.
	Syntax:
	`"'^BML-<vt addr range>,<max length>'"`
	Variable:
	variable text address range = 1 - 4000.
	max length = 2000 (0=no max length).
	Example:
	`SEND_COMMAND Panel,"'^BML-500,20'"`
	Sets the maximum length of the text area input button to 20 characters.

^BMP	Assign a picture to those buttons with a defined address range.
	Syntax:
	`"'^BMP-<vt addr range>,<button states range>,<name of bitmap/picture>'"`
	Variable:
	variable text address range = 1 - 4000.
	button states range = 1 - 256 for multi-state buttons (0 = All states, for General buttons 1 = Off state and 2 = On state).
	name of bitmap/picture = 1 - 50 ASCII characters.
	Example:
	`SEND_COMMAND Panel,"'^BMP-500.504&510.515,1,bitmap.png'"`
	Sets the OFF state picture for the buttons with variable text ranges of 500-504 & 510-515.

^BNC	Clear current TakeNote annotations.
	Syntax:
	`"'^BNC-<vt addr range>,<command value>'"`
	Variable:
	variable text address range = 1 - 4000.
	command value = (0= clear, 1= clear all).
	Example:
	`SEND_COMMAND Panel,"'^BNC-973,0'"`
	Clears the annotation of the TakeNote button with variable text 973.

^BNN	Set the TakeNote network name for the specified Addresses.
	Syntax:
	`"'^BNN-<vt addr range>,<network name>'"`
	Variable:
	variable text address range = 1 - 4000.
	network name = Use a valid IP Address.
	Example:
	`SEND_COMMAND Panel,"'^BNN-973,192.168.169.99'"`
	Sets the TakeNote button network name to 192.168.169.99.

^BNT	Set the TakeNote network port for the specified Addresses.
	Syntax:
	`"'^BNT-<vt addr range>,<network port>'"`
	Variable:
	variable text address range = 1 - 4000.
	network port = 1 - 65535.
	Example:
	`SEND_COMMAND Panel,"'^BNT-973,5000'"`
	Sets the TakeNote button network port to 5000.

"^" Button Commands (Cont.)	

^BOP	Set the button opacity. The button opacity can be specified as a decimal between 0 - 255, where zero (0) is invisible and 255 is opaque, or as a HEX code, as used in the color commands by preceding the HEX code with the # sign. In this case, #00 becomes invisible and #FF becomes opaque. If the opacity is set to zero (0), this does not make the button inactive, only invisible.
	Syntax:
	`"'^BOP-<vt addr range>,<button states range>,<button opacity>'"`
	Variable:
	variable text address range = 1 - 4000.
	button states range = 1 - 256 for multi-state buttons (0 = All states, for General buttons 1 = Off state and 2 = On state).
	button opacity = 0 (invisible) - 255 (opaque).
	Example:
	`SEND_COMMAND Panel,"'^BOP-500.504&510.515,1,200'"`
	Example 2:
	`SEND_COMMAND Panel,"'^BOP-500.504&510.515,1,#C8'"`
	Both examples set the opacity of the buttons with the variable text range of 500-504 and 510-515 to 200.

^BOR	Set a border to a specific border style associated with a border value for those buttons with a defined address range. Refer to theBorder Styles and Programming Numbers table on page 31 for more information.
	Syntax:
	`"'^BOR-<vt addr range>,<border style name or border value>'"`
	Variable:
	variable text address range = 1 - 4000.
	border style name = Refer to the Border Styles and Programming Numbers table on page 31.
	border value = 0 - 41.
	Examples:
	`SEND_COMMAND Panel,"'^BOR-500.504&510.515,10'"`
	Sets the border by number (#10) to those buttons with the variable text range of 500-504 & 510-515.
	`SEND_COMMAND Panel,"'^BOR-500.504&510,AMX Elite -M'"`
	Sets the border by name (AMX Elite) to those buttons with the variable text range of 500-504 & 510-515.
	The border style is available through the TPDesign4 border-style drop-down list. Refer to theTPD4 Border Styles by Name table on page 32 for more information.

^BPP	Set or clear the protected page flip flag of a button. Zero clears the flag.
	Syntax:
	`"'^BPP-<vt addr range>,<protected page flip flag value>'"`
	Variable:
	variable text address range = 1 - 4000.
	protected page flip flag value range = 0 - 4 (**0 clears the flag**).
	Example:
	`SEND_COMMAND Panel,"'^BPP-500,1'"`
	Sets the button to protected page flip flag 1 (sets it to password 1).

"^" Button Commands (Cont.)	

^BRD	Set the border of a button state/states. **Only if** the specified border is not the same as the current border. The border names are available through the TPDesign4 border-name drop-down list.
	Syntax:
	`"'^BRD-<vt addr range>,<button states range>,<border name>'"`
	Variable:
	variable text address range = 1 - 4000.
	button states range = 1 - 256 for multi-state buttons (0 = All states, for General buttons 1 = Off state and 2 = On state).
	border name = Refer toBorder Styles and Programming Numbers table on page 31.
	Example:
	`SEND_COMMAND Panel,"'^BRD-500.504&510.515,1&2,Quad Line'"`
	Sets the border by name (Quad Line) to those buttons with the variable text range of 500-504 & 510-515.
	Refer to theTPD4 Border Styles by Name table on page 32.

^BSF	Set the focus to the text area.
	***Note**: Select one button at a time (single variable text address). Do not assign a variable text address range to set focus to multiple buttons. Only one variable text address can be in focus at a time.*
	Syntax:
	`"'^BSF-<vt addr range>,<selection value>'"`
	Variable:
	variable text address range = 1 - 4000.
	selection value = Unselect = 0 and select = 1.
	Example:
	`SEND_COMMAND Panel,"'^BSF-500,1'"`
	Sets the focus to the text area of the button.

^BSM	Submit text for text area buttons. This command causes the text areas to send their text as strings to the NetLinx Master.
	Syntax:
	`"'^BSM-<vt addr range>'"`
	Variable:
	variable text address range = 1 - 4000.
	Example:
	`SEND_COMMAND Panel,"'^BSM-500'"`
	Submits the text of the text area button.

^BVL	Log-On/Log-Off the computer control connection.
	Syntax:
	`"'^BVL-<vt addr range>,<connection>'"`
	Variable:
	variable text address range = 1 - 4000.
	connection = 0 (Log-Off connection) and 1 (Log-On connection).
	Example:
	`SEND_COMMAND Panel,"'^BVL-500,0'"`
	Logs-off the computer control connection of the button.

^BVN	Set the computer control remote host for the specified address.
	Syntax:
	`SEND_COMMAND <DEV>,"'^BVN-<vt addr range>,<remote host>'"`
	Variables:
	variable text address range = 1 - 4000.
	remote host = 1 - 50 ASCII characters.
	Example:
	`SEND_COMMAND Panel,"'^BVN-500,191.191.191.191'"`
	Sets the remote host to '191.191.191.191' for the specific computer control button.

"^" Button Commands (Cont.)	

^BVP	Set the network password for the specified address.
	Syntax:
	`"'^BVP-<vt addr range>,<network password>'"`
	Variable:
	variable text address range = 1 - 4000.
	network password = 1 - 50 ASCII characters.
	Example:
	`SEND_COMMAND Panel,"'^BVP-500,PCLOCK'"`
	Sets the password to PCLOCK for the specific PC control button.

^BVT	Set the computer control network port for the specified address.
	Syntax:
	`"'^BVT-<vt addr range>,<network port>'"`
	Variable:
	variable text address range = 1 - 4000.
	network port = 1 - 65535.
	Example:
	`SEND_COMMAND Panel,"'^BVT-500,5000'"`
	Sets the network port to 5000.

^BWW	Set the button word wrap feature to those buttons with a defined address range. By default, word-wrap is Off.
	Syntax:
	`"'^BWW-<vt addr range>,<button states range>,<word wrap>'"`
	Variable:
	variable text address range = 1 - 4000.
	button states range = 1 - 256 for multi-state buttons (0 = All states, for General buttons 1 = Off state and 2 = On state).
	word wrap = (0=Off and 1=On). Default is Off.
	Example:
	`SEND_COMMAND Panel,"'^BWW-500,1,1'"`
	Sets the word wrap on for the button's Off state.

^CPF	Clear all page flips from a button.
	Syntax:
	`"'^CPF-<vt addr range>'"`
	Variable:
	variable text address range = 1 - 4000.
	Example:
	`SEND_COMMAND Panel,"'^CPF-500'"`
	Clears all page flips from the button.

"^" Button Commands (Cont.)	

^DPF	Delete page flips from button if it already exists.
	Syntax:
	`"'^DFP-<vt addr range>,<actions>,<page name>'"`
	Variable:
	variable text address range = 1 - 4000.
	actions = **Stan**[dardPage] - Flip to standard page
	Prev[iousPage] - Flip to previous page
	Show[Popup] - Show Popup page
	Hide[Popup] - Hide Popup page
	Togg[lePopup] - Toggle popup state
	ClearG[roup] - Clear popup page group from all pages
	ClearP[age] - Clear all popup pages from a page with the specified page name
	ClearA[ll] - Clear all popup pages from all pages
	page name = 1 - 50 ASCII characters.
	Example:
	`SEND COMMAND Panel,"'^DPF-409,Prev'"`
	Deletes the assignment of a button from flipping to a previous page.

^ENA	Enable or disable buttons with a set variable text range.
	Syntax:
	`"'^ENA-<vt addr range>,<command value>'"`
	Variable:
	variable text address range = 1 - 4000.
	command value = (0= disable, 1= enable)
	Example:
	`SEND_COMMAND Panel,"'^ENA-500.504&510.515,0'"`
	Disables button pushes on buttons with variable text range 500-504 & 510-515.

^FON	Set a font to a specific Font ID value for those buttons with a defined address range. Font ID numbers are generated by the TPDesign4 programmers report.
	Syntax:
	`"'^FON-<vt addr range>,<button states range>,<font value>'"`
	Variable:
	variable text address range = 1 - 4000.
	button states range = 1 - 256 for multi-state buttons (0 = All states, for General buttons 1 = Off state and 2 = On state).
	font value = Range = 1 - XXX. Refer to theDefault Font Styles and ID Numbers table on page 31.
	Example:
	`SEND_COMMAND Panel,"'^FON-500.504&510.515,1&2,4'"`
	Sets the font size to font ID #4 for the On and Off states of buttons with the variable text range of 500-504 & 510-515.
	***Note**: The Font ID is generated by TPD4 and is located in TPD4 through the Main menu. Panel > Generate Programmer's Report >Text Only Format >Readme.txt.*

^GDI	Change the bargraph drag increment.
	Syntax:
	`"'^GDI-<vt addr range>,<bargraph drag increment>'"`
	Variable:
	variable text address range = 1 - 4000.
	bargraph drag increment = The default drag increment is 256.
	Example:
	`SEND_COMMAND Panel,"'^GDI-7,128'"`
	Sets the bargraph with variable text 7 to a drag increment of 128.

"^" Button Commands (Cont.)	

^GIV	Invert the joystick axis to move the origin to another corner. Parameters 1,2, and 3 will cause a bargraph or slider to be inverted regardless of orientation. Their effect will be as described for joysticks.
	Syntax:
	`"'^GIV-<vt addr range>,<joystick axis to invert>'"`
	Variable:
	variable text address range = 1 - 4000.
	joystick axis to invert = 0 - 3.
	For a bargraph 1 = Invert, 0 = Non Invert
	Example:
	`SEND_COMMAND Panel,"'^GIV-500,3'"`
	Inverts the joystick axis origin to the bottom right corner.

^GLH	Change the bargraph upper limit.
	Syntax:
	`"'^GLH-<vt addr range>,<bargraph hi>'"`
	Variable:
	variable text address range = 1 - 4000.
	bargraph limit range = 1 - 65535 (*bargraph upper limit range*).
	Example:
	`SEND_COMMAND Panel,"'^GLH-500,1000'"`
	Changes the bargraph upper limit to 1000.

^GLL	Change the bargraph lower limit.
	Syntax:
	`"'^GLL-<vt addr range>,<bargraph low>'"`
	Variable:
	variable text address range = 1 - 4000.
	bargraph limit range = 1 - 65535 (*bargraph lower limit range*).
	Example:
	`SEND_COMMAND Panel,"'^GLL-500,150'"`
	Changes the bargraph lower limit to 150.

^GRD	Change the bargraph ramp-down time in 1/10th of a second.
	Syntax:
	`"'^GRD-<vt addr range>,<bargraph ramp down time>'"`
	Variable:
	variable text address range = 1 - 4000.
	bargraph ramp down time = In 1/10th of a second intervals.
	Example:
	`SEND_COMMAND Panel,"'^GRD-500,200'"`
	Changes the bargraph ramp down time to 20 seconds.

^GRU	Change the bargraph ramp-up time in 1/10th of a second.
	Syntax:
	`"'^GRU-<vt addr range>,<bargraph ramp up time>'"`
	Variable:
	variable text address range = 1 - 4000.
	bargraph ramp up time = In 1/10th of a second intervals.
	Example:
	`SEND_COMMAND Panel,"'^GRU-500,100'"`
	Changes the bargraph ramp up time to 10 seconds.

"^" Button Commands (Cont.)	

^GSC	Change the bargraph slider color or joystick cursor color. A user can also assign the color by Name and R,G,B value (RRGGBB or RRGGBBAA).
	Syntax:
	`"'^GSC-<vt addr range>,<color value>'"`
	Variable:
	variable text address range = 1 - 4000.
	color value = Refer to theRGB Values for all 88 Basic Colors table on page 29.
	Example:
	`SEND_COMMAND Panel,"'^GSC-500,12'"`
	Changes the bargraph or joystick slider color to Yellow.

^GSN	Change the bargraph slider name or joystick cursor name. Slider names and cursor names can be found in the TPDesign4 slider name and cursor drop-down list.
	Syntax:
	`"'^GSN-<vt addr range>,<bargraph slider name>'"`
	Variable:
	variable text address range = 1 - 4000.
	bargraph slider name = See table below.
	Example:
	`SEND_COMMAND Panel,"'^GSN-500,Ball'"`
	Changes the bargraph slider name or the Joystick cursor name to 'Ball'.

^ICO	Set the icon to a button.
	Syntax:
	`"'^ICO-<vt addr range>,<button states range>,<icon index>'"`
	Variable:
	variable text address range = 1 - 4000.
	button states range = 1 - 256 for multi-state buttons (0 = All states, for General buttons 1 = Off state and 2 = On state).
	icon index range = 0 - 9900 (**a value of 0 is clear**).
	Example:
	`SEND_COMMAND Panel,"'^ICO-500.504&510.515,1&2,1'"`
	Sets the icon for On and Off states for buttons with variable text ranges of 500-504 & 510-515.

^JSB	Set bitmap/picture alignment using a numeric keypad layout for those buttons with a defined address range. The alignment of 0 is followed by ',<left>,<top>'. The left and top coordinates are relative to the upper left corner of the button.
	Syntax:
	`"'^JSB-<vt addr range>,<button states range>,<new text alignment>'"`
	Variable:
	variable text address range = 1 - 4000.
	button states range = 1 - 256 for multi-state buttons (0 = All states, for General buttons 1 = Off state and 2 = On state).
	new text alignment = Value of 1 - 9 corresponds to the following locations:
	Example:
	`SEND_COMMAND Panel,"'^JSB-500.504&510.515,1&2,1'"`
	Sets the off/on state picture alignment to upper left corner for those buttons with variable text ranges of 500-504 & 510-515.

"^" Button Commands (Cont.)	

^JSI	Set icon alignment using a numeric keypad layout for those buttons with a defined address range. The alignment of 0 is followed by ',<left>,<top>'. The left and top coordinates are relative to the upper left corner of the button.
	Syntax:
	`"'^JSI-<vt addr range>,<button states range>,<new icon alignment>'"`
	Variable:
	variable text address range = 1 - 4000.
	button states range = 1 - 256 for multi-state buttons (0 = All states, for General buttons 1 = Off state and 2 = On state).
	new icon alignment = Value of 1 - 9 corresponds to the following locations:
	Example:
	`SEND_COMMAND Panel,"'^JSI-500.504&510.515,1&2,1'"`
	Sets the Off/On state icon alignment to upper left corner for those buttons with variable text range of 500-504 & 510-515.

^JST	Set text alignment using a numeric keypad layout for those buttons with a defined address range. The alignment of 0 is followed by ',<left>,<top>'. The left and top coordinates are relative to the upper left corner of the button.
	Syntax:
	`"'^JST-<vt addr range>,<button states range>,<new text alignment>'"`
	Variable:
	variable text address range = 1 - 4000.
	button states range = 1 - 256 for multi-state buttons (0 = All states, for General buttons 1 = Off state and 2 = On state).
	new text alignment = Value of 1 - 9 corresponds to the following locations:
	Example:
	`SEND_COMMAND Panel,"'^JST-500.504&510.515,1&2,1'"`
	Sets the text alignment to the upper left corner for those buttons with variable text ranges of 500-504 & 510-515.

^SHO	Show or hide a button with a set variable text range.
	Syntax:
	`"'^SHO-<vt addr range>,<command value>'"`
	Variable:
	variable text address range = 1 - 4000.
	command value = (0= hide, 1= show).
	Example:
	`SEND_COMMAND Panel,"'^SHO-500.504&510.515,0'"`
	Hides buttons with variable text address range 500-504 & 510-515.

^TEC	Set the text effect color for the specified addresses/states to the specified color. The Text Effect is specified by name and can be found in TPD4. You can also assign the color by name or RGB value (RRGGBB or RRGGBBAA).
	Syntax:
	`"'^TEC-<vt addr range>,<button states range>,<color value>'"`
	Variable:
	variable text address range = 1 - 4000.
	button states range = 1 - 256 for multi-state buttons (0 = All states, for General buttons 1 = Off state and 2 = On state).
	color value = Refer to theRGB Values for all 88 Basic Colors table on page 29.
	Example:
	`SEND_COMMAND Panel,"'^TEC-500.504&510.515,1&2,12'"`
	Sets the text effect color to Very Light Yellow on buttons with variable text 500-504 and 510-515.

"^" Button Commands (Cont.)	

^TEF	Set the text effect. The Text Effect is specified by name and can be found in TPD4.
	Syntax:
	`"'^TEF-<vt addr range>,<button states range>,<text effect name>'"`
	Variable:
	variable text address range = 1 - 4000.
	button states range = 1 - 256 for multi-state buttons (0 = All states, for General buttons 1 = Off state and 2 = On state).
	text effect name = **Refer to theText Effects table on page 49 for a listing of text effect names**.
	Example:
	`SEND_COMMAND Panel,"'^TEF-500.504&510.515,1&2,Soft Drop Shadow 3'"`
	Sets the text effect to Soft Drop Shadow 3 for the button with variable text range 500-504 and 510-515.

^TOP	Enables/disables touch output to Master. If enabled, Press/Move/Release events are sent to the Master as string events. Syntax: `"'^TOP-<state>'"` <state> is 0(disable) 1(presses/releases), 2(moves), 3(press/move/release). ***Note:*** *Move should be used with caution. This setting can generate a significant amount of traffic to the master depending on user interaction.* Example command: "'^TOP-1"' Example Response: "String Event: Text: Press,320,480" Example Response: "String Event: Text: Release,320,480"

^TXT	Sets Non-Unicode text. Assign a text string to those buttons with a defined address range.
	Syntax:
	`"'^TXT-<vt addr range>,<button states range>,<new text>'"`
	Variable:
	variable text address range = 1 - 4000.
	button states range = 1 - 256 for multi-state buttons (0 = All states, for General buttons 1 = Off state and 2 = On state).
	new text = 1 - 50 ASCII characters.
	Example:
	`SEND_COMMAND Panel,"'^TXT-500.504&510.515,1&2,Test Only'"`
	Sets the On and Off state text for buttons with the variable text ranges of 500-504 & 510-515.

^UNI	Set Unicode text. For the ^UNI command (%UN and ^BMF command), the Unicode text is sent as ASCII-HEX nibbles.
	Syntax:
	`"'^UNI-<vt addr range>,<button states range>,<unicode text>'"`
	Variable:
	variable text address range = 1 - 4000.
	button states range = 1 - 256 for multi-state buttons (0 = All states, for General buttons 1 = Off state and 2 = On state).
	unicode text = Unicode HEX value.
	Example:
	`SEND_COMMAND Panel,"'^UNI-500,1,0041'"`
	Sets the button's unicode character to 'A'.
	Note: To send the variable text 'A' in unicode to all states of the variable text button 1, (for which the character code is 0041 Hex), send the following command:
	`SEND_COMMAND TP,"'^UNI-1,0,0041'"`
	Note*: Unicode is always represented in a HEX value. TPD4 generates (through the Text Enter Box dialog) unicode HEX values. Refer to the TPDesign4 Instruction Manual for more information.*

Text Effect Names

The following is a listing of text effects names. This list is associated with the **^TEF** command on page 48.

Text Effects	
• Glow -S	• Hard Drop Shadow 6
• Glow -M	• Hard Drop Shadow 7
• Glow -L	• Hard Drop Shadow 8
• Glow -X	• Soft Drop Shadow 1 with outline
• Outline -S	• Soft Drop Shadow 2 with outline
• Outline -M	• Soft Drop Shadow 3 with outline
• Outline -L	• Soft Drop Shadow 4 with outline
• Outline -X	• Soft Drop Shadow 5 with outline
• Soft Drop Shadow 1	• Soft Drop Shadow 6 with outline
• Soft Drop Shadow 2	• Soft Drop Shadow 7 with outline
• Soft Drop Shadow 3	• Soft Drop Shadow 8 with outline
• Soft Drop Shadow 4	• Medium Drop Shadow 1 with outline
• Soft Drop Shadow 5	• Medium Drop Shadow 2 with outline
• Soft Drop Shadow 6	• Medium Drop Shadow 3 with outline
• Soft Drop Shadow 7	• Medium Drop Shadow 4 with outline
• Soft Drop Shadow 8	• Medium Drop Shadow 5 with outline
• Medium Drop Shadow 1	• Medium Drop Shadow 6 with outline
• Medium Drop Shadow 2	• Medium Drop Shadow 7 with outline
• Medium Drop Shadow 3	• Medium Drop Shadow 8 with outline
• Medium Drop Shadow 4	• Hard Drop Shadow 1 with outline
• Medium Drop Shadow 5	• Hard Drop Shadow 2 with outline
• Medium Drop Shadow 6	• Hard Drop Shadow 3 with outline
• Medium Drop Shadow 7	• Hard Drop Shadow 4 with outline
• Medium Drop Shadow 8	• Hard Drop Shadow 5 with outline
• Hard Drop Shadow 1	• Hard Drop Shadow 6 with outline
• Hard Drop Shadow 2	• Hard Drop Shadow 7 with outline
• Hard Drop Shadow 3	• Hard Drop Shadow 8 with outline
• Hard Drop Shadow 4	
• Hard Drop Shadow 5	

Button Query Commands

Button Query commands reply with a custom event. Each button/state combination has one custom event. Each query is assigned a unique custom event type. **The following example is for debug purposes only:**

```
NetLinx Example: CUSTOM_EVENT[device, Address, Custom event type]

DEFINE_EVENT
CUSTOM_EVENT[TP,529,1001]      // Text
CUSTOM_EVENT[TP,529,1002]      // Bitmap
CUSTOM_EVENT[TP,529,1003]      // Icon
CUSTOM_EVENT[TP,529,1004]      // Text Justification
CUSTOM_EVENT[TP,529,1005]      // Bitmap Justification
CUSTOM_EVENT[TP,529,1006]      // Icon Justification
CUSTOM_EVENT[TP,529,1007]      // Font
CUSTOM_EVENT[TP,529,1008]      // Text Effect Name
CUSTOM_EVENT[TP,529,1009]      // Text Effect Color
CUSTOM_EVENT[TP,529,1010]      // Word Wrap
CUSTOM_EVENT[TP,529,1011]      // ON state Border Color
CUSTOM_EVENT[TP,529,1012]      // ON state Fill Color
CUSTOM_EVENT[TP,529,1013]      // ON state Text Color
CUSTOM_EVENT[TP,529,1014]      // Border Name
CUSTOM_EVENT[TP,529,1015]      // Opacity

{
   Send_String 0,"'ButtonGet Id=',ITOA(CUSTOM.ID),' Type=',ITOA(CUSTOM.TYPE)"
   Send_String 0,"'Flag   =',ITOA(CUSTOM.FLAG)"
   Send_String 0,"'VALUE1 =',ITOA(CUSTOM.VALUE1)"
   Send_String 0,"'VALUE2 =',ITOA(CUSTOM.VALUE2)"
   Send_String 0,"'VALUE3 =',ITOA(CUSTOM.VALUE3)"
   Send_String 0,"'TEXT   =',CUSTOM.TEXT"
   Send_String 0,"'TEXT LENGTH =',ITOA(LENGTH_STRING(CUSTOM.TEXT))"
}
```

All custom events have the following 6 fields:

Custom Event Fields	
Field	Description
Uint Flag	0 means text is a standard string, 1 means Unicode encoded string
slong value1	button state number
slong value2	actual length of string (this is not encoded size)
slong value3	index of first character (usually 1 or same as optional index
string text	the text from the button
text length (string encode)	button text length

These fields are populated differently for each query command. The text length (*String Encode*) field is not used in any command.

Button Query Commands	

?BCB	Get the current border color.
	Syntax:
	`"'?BCB-<vt addr range>,<button states range>'"`
	Variable:
	variable text address range = 1 - 4000.
	button states range = 1 - 256 for multi-state buttons (0 = All states, for General buttons 1 = Off state and 2 = On state).
	custom event type **1011:**
	Flag - zero
	Value1 - Button state number
	Value2 - Actual length of string (should be 9)
	Value3 - Zero
	Text - Hex encoded color value (ex: #000000FF)
	Text length - Color name length (should be 9)
	Example:
	`SEND COMMAND Panel,"'?BCB-529,1'"`
	Gets the button 'OFF state' border color. information.
	The result sent to the Master would be:
	ButtonGet Id = 529 Type = 1011
	Flag = 0
	VALUE1 = 1
	VALUE2 = 9
	VALUE3 = 0
	TEXT = #222222FF
	TEXT LENGTH = 9

?BCF	Get the current fill color.
	Syntax:
	`"'?BCF-<vt addr range>,<button states range>'"`
	Variable:
	variable text address range = 1 - 4000.
	button states range = 1 - 256 for multi-state buttons (0 = All states, for General buttons 1 = Off state and 2 = On state).
	custom event type **1012:**
	Flag - Zero
	Value1 - Button state number
	Value2 - Actual length of string (should be 9)
	Value3 - Zero
	Text - Hex encoded color value (ex: #000000FF)
	Text length - Color name length (should be 9)
	Example:
	`SEND COMMAND Panel,"'?BCF-529,1'"`
	Gets the button 'OFF state' fill color information.
	The result sent to the Master would be:
	ButtonGet Id = 529 Type = 1012
	Flag = 0
	VALUE1 = 1
	VALUE2 = 9
	VALUE3 = 0
	TEXT = #FF8000FF
	TEXT LENGTH = 9

Button Query Commands (Cont.)	

?BCT	Get the current text color.
	Syntax:
	`"'?BCT-<vt addr range>,<button states range>'"`
	Variable:
	variable text address range = 1 - 4000.
	button states range = 1 - 256 for multi-state buttons (0 = All states, for General buttons 1 = Off state and 2 = On state).
	custom event type **1013:**
	Flag - Zero
	Value1 - Button state number
	Value2 - Actual length of string (should be 9)
	Value3 - Zero
	Text - Hex encoded color value (ex: #000000FF)
	Text length - Color name length (should be 9)
	Example:
	`SEND COMMAND Panel,"'?BCT-529,1'"`
	Gets the button 'OFF state' text color information.
	The result sent to Master would be:
	ButtonGet Id = 529 Type = 1013
	Flag = 0
	VALUE1 = 1
	VALUE2 = 9
	VALUE3 = 0
	TEXT = #FFFFFEFF
	TEXT LENGTH = 9

?BMP	Get the current bitmap name.
	Syntax:
	`"'?BMP-<vt addr range>,<button states range>'"`
	Variable:
	variable text address range = 1 - 4000.
	button states range = 1 - 256 for multi-state buttons (0 = All states, for General buttons 1 = Off state and 2 = On state).
	custom event type **1002:**
	Flag - Zero
	Value1 - Button state number
	Value2 - Actual length of string
	Value3 - Zero
	Text - String that represents the bitmap name
	Text length - Bitmap name text length (should be 9)
	Example:
	`SEND COMMAND Panel,"'?BMP-529,1'"`
	Gets the button 'OFF state' bitmap information.
	The result sent to the Master would be:
	ButtonGet Id = 529 Type = 1002
	Flag = 0
	VALUE1 = 1
	VALUE2 = 9
	VALUE3 = 0
	TEXT = Buggs.png
	TEXT LENGTH = 9

Button Query Commands (Cont.)	

?BOP	Get the overall button opacity.
	Syntax:
	`"'?BOP-<vt addr range>,<button states range>'"`
	Variable:
	variable text address range = 1 - 4000.
	button states range = 1 - 256 for multi-state buttons (0 = All states, for General buttons 1 = Off state and 2 = On state).
	custom event type **1015:**
	Flag - Zero
	Value1 - Button state number
	Value2 - Opacity
	Value3 - Zero
	Text - Blank
	Text length - Zero
	Example:
	`SEND COMMAND Panel,"'?BOP-529,1'"`
	Gets the button 'OFF state' opacity information.
	The result sent to the Master would be:
	ButtonGet Id = 529 Type = 1015
	Flag = 0
	VALUE1 = 1
	VALUE2 = 200
	VALUE3 = 0
	TEXT =
	TEXT LENGTH = 0

?BRD	Get the current border name.
	Syntax:
	`"'?BRD-<vt addr range>,<button states range>'"`
	Variable:
	variable text address range = 1 - 4000.
	button states range = 1 - 256 for multi-state buttons (0 = All states, for General buttons 1 = Off state and 2 = On state).
	custom event type **1014:**
	Flag - Zero
	Value1 - Button state number
	Value2 - Actual length of string
	Value3 - Zero
	Text - String that represents border name
	Text length - Border name length
	Example:
	`SEND COMMAND Panel,"'?BRD-529,1'"`
	Gets the button 'OFF state' border information.
	The result sent to the Master would be:
	ButtonGet Id = 529 Type = 1014
	Flag = 0
	VALUE1 = 1
	VALUE2 = 22
	VALUE3 = 0
	TEXT = Double Bevel Raised -L
	TEXT LENGTH = 22

Button Query Commands (Cont.)	

?BWW	Get the current word wrap flag status.
	Syntax:
	`"'?BWW-<vt addr range>,<button states range>'"`
	Variable:
	variable text address range = 1 - 4000.
	button states range = 1 - 256 for multi-state buttons (0 = All states, for General buttons 1 = Off state and 2 = On state).
	custom event type **1010:**
	Flag - Zero
	Value1 - Button state number
	Value2 - 0 = no word wrap, 1 = word wrap
	Value3 - Zero
	Text - Blank
	Text length - Zero
	Example:
	`SEND COMMAND Panel,"'?BWW-529,1'"`
	Gets the button 'OFF state' word wrap flag status information.
	The result sent to the Master would be:
	ButtonGet Id = 529 Type = 1010
	Flag = 0
	VALUE1 = 1
	VALUE2 = 1
	VALUE3 = 0
	TEXT =
	TEXT LENGTH = 0

?FON	Get the current font index.
	Syntax:
	`"'?FON-<vt addr range>,<button states range>'"`
	Variable:
	variable text address range = 1 - 4000.
	button states range = 1 - 256 for multi-state buttons (0 = All states, for General buttons 1 = Off state and 2 = On state).
	custom event type **1007:**
	Flag - Zero
	Value1 - Button state number
	Value2 - Font index
	Value3 - Zero
	Text - Blank
	Text length - Zero
	Example:
	`SEND COMMAND Panel,"'?FON-529,1'"`
	Gets the button 'OFF state' font type index information.
	The result sent to the Master would be:
	ButtonGet Id = 529 Type = 1007
	Flag = 0
	VALUE1 = 1
	VALUE2 = 72
	VALUE3 = 0
	TEXT =
	TEXT LENGTH = 0

Button Query Commands (Cont.)	

?ICO	Get the current icon index.
	Syntax:
	`"'?ICO-<vt addr range>,<button states range>'"`
	Variable:
	variable text address range = 1 - 4000.
	button states range = 1 - 256 for multi-state buttons (0 = All states, for General buttons 1 = Off state and 2 = On state).
	custom event type **1003:**
	Flag - Zero
	Value1 - Button state number
	Value2 - Icon Index
	Value3 - Zero
	Text - Blank
	Text length - Zero
	Example:
	`SEND COMMAND Panel,"'?ICO-529,1&2'"`
	Gets the button 'OFF state' icon index information.
	The result sent to the Master would be:
	ButtonGet Id = 529 Type = 1003
	Flag = 0
	VALUE1 = 2
	VALUE2 = 12
	VALUE3 = 0
	TEXT =
	TEXT LENGTH = 0

?JSB	Get the current bitmap justification.
	Syntax:
	`"'?JSB-<vt addr range>,<button states range>'"`
	Variable:
	variable text address range = 1 - 4000.
	button states range = 1 - 256 for multi-state buttons (0 = All states, for General buttons 1 = Off state and 2 = On state).
	custom event type **1005:**
	Flag - Zero
	Value1 - Button state number
	Value2 - 1 - 9 justify
	Value3 - Zero
	Text - Blank
	Text length - Zero
	Example:
	`SEND COMMAND Panel,"'?JSB-529,1'"`
	Gets the button 'OFF state' bitmap justification information.
	The result sent to the Master would be:
	ButtonGet Id = 529 Type = 1005
	Flag = 0
	VALUE1 = 1
	VALUE2 = 5
	VALUE3 = 0
	TEXT =
	TEXT LENGTH = 0

Button Query Commands (Cont.)	

?JSI	Get the current icon justification.
	Syntax:
	`"'?JSI-<vt addr range>,<button states range>'"`
	Variable:
	variable text address range = 1 - 4000.
	button states range = 1 - 256 for multi-state buttons (0 = All states, for General buttons 1 = Off state and 2 = On state).
	custom event type **1006:**
	Flag - Zero
	Value1 - Button state number
	Value2 - 1 - 9 justify
	Value3 - Zero
	Text - Blank
	Text length - Zero
	Example:
	`SEND COMMAND Panel,"'?JSI-529,1'"`
	Gets the button 'OFF state' icon justification information.
	The result sent to the Master would be:
	ButtonGet Id = 529 Type = 1006
	Flag = 0
	VALUE1 = 1
	VALUE2 = 6
	VALUE3 = 0
	TEXT =
	TEXT LENGTH = 0

?JST	Get the current text justification.
	Syntax:
	`"'?JST-<vt addr range>,<button states range>'"`
	Variable:
	variable text address range = 1 - 4000.
	button states range = 1 - 256 for multi-state buttons (0 = All states, for General buttons 1 = Off state and 2 = On state).
	custom event type **1004:**
	Flag - Zero
	Value1 - Button state number
	Value2 - 1 - 9 justify
	Value3 - Zero
	Text - Blank
	Text length - Zero
	Example:
	`SEND COMMAND Panel,"'?JST-529,1'"`
	Gets the button 'OFF state' text justification information.
	The result sent to the Master would be:
	ButtonGet Id = 529 Type = 1004
	Flag = 0
	VALUE1 = 1
	VALUE2 = 1
	VALUE3 = 0
	TEXT =
	TEXT LENGTH = 0

Button Query Commands (Cont.)	

?TEC	Get the current text effect color.
	Syntax:
	`"'?TEC-<vt addr range>,<button states range>'"`
	Variable:
	variable text address range = 1 - 4000.
	button states range = 1 - 256 for multi-state buttons (0 = All states, for General buttons 1 = Off state and 2 = On state).
	custom event type **1009:**
	Flag - Zero
	Value1 - Button state number
	Value2 - Actual length of string (should be 9)
	Value3 - Zero
	Text - Hex encoded color value (ex: #000000FF)
	Text length - Color name length (should be 9)
	Example:
	`SEND COMMAND Panel,"'?TEC-529,1'"`
	Gets the button 'OFF state' text effect color information.
	The result sent to the Master would be:
	ButtonGet Id = 529 Type = 1009
	Flag = 0
	VALUE1 = 1
	VALUE2 = 9
	VALUE3 = 0
	TEXT = #5088F2AE
	TEXT LENGTH = 9

?TEF	Get the current text effect name.
	Syntax:
	`"'?TEF-<vt addr range>,<button states range>'"`
	Variable:
	variable text address range = 1 - 4000.
	button states range = 1 - 256 for multi-state buttons (0 = All states, for General buttons 1 = Off state and 2 = On state).
	custom event type **1008:**
	Flag - Zero
	Value1 - Button state number
	Value2 - Actual length of string
	Value3 - Zero
	Text - String that represents the text effect name
	Text length - Text effect name length
	Example:
	`SEND COMMAND Panel,"'?TEF-529,1'"`
	Gets the button 'OFF state' text effect name information.
	The result sent to the Master would be:
	ButtonGet Id = 529 Type = 1008
	Flag = 0
	VALUE1 = 1
	VALUE2 = 18
	VALUE3 = 0
	TEXT = Hard Drop Shadow 3
	TEXT LENGTH = 18

Button Query Commands (Cont.)	

?TXT	Get the current text information.
	Syntax:
	`"'?TXT-<vt addr range>,<button states range>,<optional index>'"`
	Variable:
	variable text address range = 1 - 4000.
	button states range = 1 - 256 for multi-state buttons (0 = All states, for General buttons 1 = Off state and 2 = On state).
	optional index = This is used if a string was too long to get back in one command. The reply will start at this index.
	custom event type **1001:**
	Flag - Zero
	Value1 - Button state number
	Value2 - Actual length of string
	Value3 - Index
	Text - Text from the button
	Text length - Button text length
	Example:
	`SEND COMMAND Panel,"'?TXT-529,1'"`
	Gets the button 'OFF state' text information.
	The result sent to the Master would be:
	ButtonGet Id = 529 Type = 1001
	Flag = 0
	VALUE1 = 1
	VALUE2 = 14
	VALUE3 = 1
	TEXT = This is a test
	TEXT LENGTH = 14

Panel Runtime Operations

Serial Commands are used in the AxcessX Terminal Emulator mode. These commands are case insensitive.

Panel Runtime Operation Commands	

@AKB	Pop up the keyboard icon and initialize the text string to that specified. Keyboard string is set to null on power up and is stored until power is lost. The Prompt Text is optional.
	Syntax:
	`"'@AKB-<initial text>;<prompt text>'"`
	Variables:
	`initial text = 1 - 50 ASCII characters.`
	`prompt text = 1 - 50 ASCII characters.`
	Example:
	`SEND COMMAND Panel,"'@AKB-Texas;Enter State'"`
	Pops up the Keyboard and initializes the text string 'Texas' with prompt text 'Enter State'.

AKEYB	Pop up the keyboard icon and initialize the text string to that specified. Keyboard string is set to null on power up and is stored until power is lost.
	Syntax:
	`"'AKEYB-<initial text>'"`
	Variables:
	`initial text = 1 - 50 ASCII characters.`
	Example:
	`SEND COMMAND Panel,"'AKEYB-This is a Test'"`
	Pops up the Keyboard and initializes the text string 'This is a Test'.

Panel Runtime Operation Commands (Cont.)	

AKEYP	Pop up the keypad icon and initialize the text string to that specified. The keypad string is set to null on power up and is stored until power is lost.
	Syntax:
	`"'AKEYP-<number string>'"`
	Variables:
	`number string = 0 - 9999.`
	Example:
	`SEND COMMAND Panel,"'AKEP-12345'"`
	Pops up the Keypad and initializes the text string '12345'.

AKEYR	Remove the Keyboard/Keypad. Remove keyboard or keypad that was displayed using 'AKEYB', 'AKEYP', 'PKEYP', @AKB, @AKP, @PKP, @EKP, or @TKP commands.
	Syntax:
	`"'AKEYR'"`
	Example:
	`SEND COMMAND Panel,"'AKEYR'"`
	Removes the Keyboard/Keypad.

@AKP	Pop up the keypad icon and initialize the text string to that specified. Keypad string is set to null on power up and is stored until power is lost. The Prompt Text is optional.
	Syntax:
	`"'@AKP-<initial text>;<prompt text>'"`
	Variables:
	`initial text = 1 - 50 ASCII characters.`
	`prompt text = 1 - 50 ASCII characters.`
	Example:
	`SEND COMMAND Panel,"'@AKP-12345678;ENTER PASSWORD'"`
	Pops up the Keypad and initializes the text string '12345678' with prompt text 'ENTER PASSWORD'.

@AKR	Remove the Keyboard/Keypad. Remove keyboard or keypad that was displayed using 'AKEYB', 'AKEYP', 'PKEYP', @AKB, @AKP, @PKP, @EKP, or @TKP commands.
	Syntax:
	`"'@AKR'"`
	Example:
	`SEND COMMAND Panel,"'@AKR'"`
	Removes the Keyboard/Keypad.

@EKP	Extend the Keypad. Pops up the keypad icon and initializes the text string to that specified. The Prompt Text is optional.
	Syntax:
	`"'@EKP-<initial text>;<prompt text>'"`
	Variables:
	`initial text = 1 - 50 ASCII characters.`
	`prompt text = 1 - 50 ASCII characters.`
	Example:
	`SEND COMMAND Panel,"'@EKP-33333333;Enter Password'"`
	Pops up the Keypad and initializes the text string '33333333' with prompt text 'Enter Password'.

PKEYP	Present a private keypad. Pops up the keypad icon and initializes the text string to that specified. Keypad displays a '*' instead of the numbers typed. The Prompt Text is optional.
	Syntax:
	`"'PKEYP-<initial text>'"`
	Variables:
	`initial text = 1 - 50 ASCII characters.`
	Example:
	`SEND COMMAND Panel,"'PKEYP-123456789'"`
	Pops up the Keypad and initializes the text string '123456789' in '*'.

Panel Runtime Operation Commands (Cont.)	

@PKP	Present a private keypad. Pops up the keypad icon and initializes the text string to that specified. Keypad displays a '*' instead of the numbers typed. The Prompt Text is optional.
	Syntax:
	`"'@PKP-<initial text>;<prompt text>'"`
	Variables:
	`initial text = 1 - 50 ASCII characters.`
	`prompt text = 1 - 50 ASCII characters.`
	Example:
	`SEND COMMAND Panel,"'@PKP-1234567;ENTER PASSWORD'"`
	Pops up the Keypad and initializes the text string 'ENTER PASSWORD' in '*'.

SETUP	Send panel to SETUP page.
	Syntax:
	`"'SETUP'"`
	Example:
	`SEND COMMAND Panel,"'SETUP'"`
	Sends the panel to the Setup Page.

SLEEP	Force the panel into screen saver mode.
	Syntax:
	`"'SLEEP'"`
	Example:
	`SEND COMMAND Panel,"'SLEEP'"`
	Forces the panel into screen saver mode.

TPAGEON	Turn On page tracking. This command turns On page tracking, whereby when the page or popups change, a string is sent to the Master. This string may be captured with a CREATE_BUFFER command for one panel and sent directly to another panel.
	Syntax:
	`"'TPAGEON'"`
	Example:
	`SEND COMMAND Panel,"'TPAGEON'"`
	Turns On page tracking.

TPAGEOFF	Turn Off page tracking.
	Syntax:
	`"'TPAGEOFF'"`
	Example:
	`SEND COMMAND Panel,"'TPAGEOFF'"`
	Turns Off page tracking.

@VKB	Popup the virtual keyboard.
	Syntax:
	`"'@VKB'"`
	Example:
	`SEND COMMAND Panel,"'@VKB'"`
	Pops-up the virtual keyboard.

WAKE	Force the panel out of screen saver mode.
	Syntax:
	`"'WAKE'"`
	Example:
	`SEND COMMAND Panel,"'WAKE'"`
	Forces the panel out of the screen saver mode.

Input Commands

These Send Commands are case insensitive.

Input Commands	

^KPS	Set the keyboard passthru.
	Syntax:
	`"'^KPS-<pass data>'"`
	Variable:
	pass data:
	<blank/empty> = Disables the keyboard.
	0 = Pass data to G4 application (default). This can be used with VPC or text areas.
	1 - 4 = Not used.
	5 = Sends out data to the Master.
	Example:
	`SEND COMMAND Panel,"'^KPS-5'"`
	Sets the keyboard passthru to the Master. Option 5 sends keystrokes directly to the Master via the Send Output String mechanism. This process sends a virtual keystroke command (^VKS) to the Master.
	Example 2:
	`SEND COMMAND Panel,"'^KPS-0'"`
	Disables the keyboard passthru to the Master.
	The following point defines how the parameters within this command work:
	• Accepts keystrokes from any of these sources: attached USB keyboard or Virtual keyboard.

^VKS	Send one or more virtual key strokes to the G4 application. Key presses and key releases are not distinguished except in the case of CTRL, ALT, and SHIFT.
	Refer to theEmbedded Codes table on page 62 that define special characters which can be included with the string but may not be represented by the ASCII character set.
	Syntax:
	`"'^VKS-<string>'"`
	Variable:
	string = Only 1 string per command/only one stroke per command.
	Example:
	`SEND COMMAND Panel,"'^VKS-'8"`
	Sends out the keystroke 'backspace' to the G4 application.

Embedded codes

The following is a list of G4-compatible embedded codes:

Embedded Codes		
Decimal numbers	Hexadecimal values	Virtual keystroke
8	($08)	Backspace
13	($0D)	Enter
27	($1B)	ESC
128	($80)	CTRL key down
129	($81)	ALT key down
130	($82)	Shift key down
131	($83)	F1
132	($84)	F2
133	($85)	F3
134	($86)	F4
135	($87)	F5
136	($88)	F6
137	($89)	F7
138	($8A)	F8
139	($8B)	F9
140	($8C)	F10
141	($8D)	F11
142	($8E)	F12
143	($8F)	Num Lock
144	($90)	Caps Lock
145	($91)	Insert
146	($92)	Delete
147	($93)	Home
148	($94)	End
149	($95)	Page Up
150	($96)	Page Down
151	($97)	Scroll Lock
152	($98)	Pause
153	($99)	Break
154	($9A)	Print Screen
155	($9B)	SYSRQ
156	($9C)	Tab
157	($9D)	Windows
158	($9E)	Menu
159	($9F)	Up Arrow
160	($A0)	Down Arrow
161	($A1)	Left Arrow
162	($A2)	Right Arrow
192	($C0)	CTRL key up
193	($C1)	ALT key up
194	($C2)	Shift key up

Panel Setup Commands

These commands are case insensitive.

Panel Setup Commands	

@PWD	Set the page flip password. @PWD sets the level 1 password only.
	Syntax:
	`"'@PWD-<page flip password>'"`
	Variables:
	`page flip password = 1 - 50 ASCII characters.`
	Example:
	`SEND COMMAND Panel,"'@PWD-Main'"`
	Sets the page flip password to 'Main'.

^PWD	Set the page flip password. Password level is required and must be 1 - 4.
	Syntax:
	`"'^PWD-<password level>,<page flip password>'"`
	Variables:
	`password level = 1 - 4.`
	page flip password = 1 - 50 ASCII characters.
	Example:
	`SEND COMMAND Panel,"'^PWD-1,Main'"`
	Sets the page flip password on Password Level 1 to 'Main'.

Dynamic Image Commands

The following is a listing and description of each Dynamic Image Command.

Dynamic Image Commands	

^BBR	Set the bitmap of a button to use a particular resource.
	Syntax:
	`"'^BBR-<vt addr range>,<button states range>,<resource name>'"`
	Variable:
	variable text address range = 1 - 4000.
	button states range = 1 - 256 for multi-state buttons (0 = All states, for General buttons 1 = Off state and 2 = On state).
	resource name = 1 - 50 ASCII characters.
	Example:
	`SEND_COMMAND Panel,"'^BBR-700,1,Sports_Image'"`
	Sets the resource name of the button to 'Sports_Image'.

^RAF	See page 64.

^RFR	Force a refresh for a given resource.
	Syntax:
	`"'^RFR-<resource name>'"`
	Variable:
	resource name = 1 - 50 ASCII characters.
	Example:
	`SEND_COMMAND Panel,"'^RFR-Sports_Image'"`
	Forces a refresh on 'Sports_Image'.

Dynamic Image Commands (Cont.)	

^RMF	Modify an existing resource.
	Syntax:
	`"'^RMF-<resource name>,<data>'"`
	Variable:
	resource name = 1 - 50 ASCII characters
	data = Refer to the table in the RAF command for more information.
	Example:
	`SEND_COMMAND Panel,"'^RMF-Sports_Image,%ALab_Test/Images%Ftest.jpg'"`
	Changes the resource 'Sports_Image' file name to 'test.jpg' and the path to 'Lab_Test/Images'.

^RSR	Change the refresh rate for a given resource.
	Syntax:
	`"'^RSR-<resource name>,<refresh rate>'"`
	Variable:
	resource name = 1 - 50 ASCII characters.
	refresh rate = Measured in seconds.
	Example:
	`SEND_COMMAND Panel,"'^RSR-Sports_Image,5'"`
	Sets the refresh rate to 5 seconds for the given resource ('Sports_Image').

^RAF	Add new resources. Adds any and all resource parameters by sending embedded codes and data.
	Syntax:
	`"'^RAF-<resource name>,<data>'"`
	Variable:
	resource name = 1 - 50 ASCII characters.
	data = Refers to the embedded codes, see table below.
	Example:
	`SEND_COMMAND Panel,"'^RAF-New Image,%P0%HAMX.COM%ALab/ Test_file%Ftest.jpg'"`
	Adds a new resource. The resource name is 'New Image', %P (protocol) is an HTTP, %H (host name) is ***AMX.COM***, %A (file path) is Lab/Test file, and %F (file name) is ***test.jpg***.

Appendix A: Telnet Commands

Overview

The NXV-300 supports Telnet communications. This type of terminal communication can be accessed remotely, via TCP/IP.

Telnet is an insecure form of terminal communication, since it does not require a physical connection to the device to connect. Further, the Telnet interface exposes information to the network (which could be intercepted by an unauthorized network client).

NOTE

It is recommended that you make initial configurations as well as subsequent changes via the Web Console. Refer to the Setup Pages and Descriptions section on page 5.

Refer to the *Terminal Commands* section on page 66 for a listing of all commands available in a terminal session.

Establishing a Terminal Connection Via Telnet

1. In your Windows taskbar, go to **Start > Run** to open the Run dialog.
2. Type **cmd** in the *Open* field and click **OK** to open an instance of the Windows command interpreter (Cmd.exe).
3. In the CMD (command), type "**telnet**" followed by a space and the NXV-300's IP Address info.
   Example: `>telnet XXX.XXX.XXX.XXX`
4. Press *Enter*.
   - Unless Telnet security is enabled, a session will begin with a welcome banner:
     Welcome to NXV-300 v2.1.8 Copyright (C) AMX Corp. 2002-2007
     >
   - If Telnet security is enabled, type in the word **login** to be prompted for a Username and Password before gaining access to the NXV-300.
5. Enter your username to be prompted for a password.
   - If the password is correct you will see the welcome banner.
   - If the password is incorrect, the following will be displayed:
     Login: User1
     Password: *****
     Login not authorized. Please try again.
     After a delay, another login prompt will be displayed to allow you to try again.
     If after 5 prompts, the login information is not entered correctly, the following message will be displayed and the connection closed:
     Login not allowed. Goodbye!

NOTE

If a connection is opened, but a valid a username / password combination is not entered (i.e. just sitting at a login prompt), the connection will be closed after one minute.

Terminal Commands

The Terminal commands listed in the following table can be sent directly to the NXV-300 via Telnet terminal session. In your terminal program, type "**Help**" or a question mark ("**?**") and **<Enter>** to access the Help Menu, and display the Program port commands described below:

Terminal Commands

Command	Description
----- Help -----	(Extended diag messages are OFF)
? or Help	Displays this list of commands.

DISK FREE	Displays the total amount of free space on the disk.
	Example:
	`>DISK FREE`
	`The disk has 2441216 bytes of free space.`

DNS LIST <D:P:S>	Displays the DNS configuration of a specific device including:
	• Domain suffix·
	• Configured DNS IP Information
	Example:
	`>DNS LIST [0:1:0]`
	`Domain suffix:amx.com`
	`The following DNS IPs are configured`
	`Entry 1-192.168.20.5`
	`Entry 2-12.18.110.8`
	`Entry 3-12.18.110.7`

ECHO ON|OFF	Enables/Disables echo (display) of typed characters.
GET CACHE ENABLE	Get the state of the image cache flash backup.
GET CACHE EXPIRE	Get the current expiration time for image cache entries.
GET CACHE SIZE	Set the maximum size for the flash cache.
GET CONFIG	Shows the current configuration.
GET DNS	Shows the DNS configuration of a device.

GET IP	Displays the current IP configuration.
	Example:
	`>GET IP`
	`IP Settings`
	`HostName MLK_INSTRUCTOR`
	`Type DHCP`
	`IP Address 192.168.21.101`
	`Subnet Mask 255.255.255.0`
	`Gateway IP 192.168.21.2`
	`MAC Address 00:60:9f:90:0d:39`

MEM	Displays the largest free block of the NXV-300's memory.
	Example:
	`>MEM`
	`The largest free block of memory is 11442776 bytes.`

MSG ON|OFF	Enables/Disables extended diagnostic messages.
	• MSG On sets the terminal program to display all messages generated by the NXV-300.
	• MSG OFF disables the display.
	Example:
	`> MSG ON`
	`Extended diagnostic information messages turned on.`
	`> MSG OFF`
	`Extended diagnostic information messages turned off.`

Terminal Commands (Cont.)	
Command	Description

PING [ADDRESS]	Pings an address (IP or URL), to test network connectivity to and confirms the presence of another networked device. The syntax is just like the PING application in Windows or Linux.
	Example:
	`>ping 192.168.29.209`
	`192.168.29.209 is alive.`

REBOOT	Reboots the NXV-300.
	Example:
	`>REBOOT`
	`Rebooting...`

RELEASE DHCP	Releases the current DHCP lease for the NXV-300. ***Note**: The NXV-300 must be rebooted to acquire a new DHCP lease.* Example: `>RELEASE DHCP`

SET DNS	Sets up the DNS configuration.
	This command prompts you to enter a Domain Name, DNS IP #1, DNS IP #2, and DNS IP #3.
	Then, enter Y (yes) to approve/store the information in the NXV-300.
	Entering N (no) cancels the operation.
	***Note**: The device must be rebooted to enable new settings.*
	Example:
	`>SET DNS`
	`-- Enter New Values or just hit Enter to keep current settings --`
	`Enter Domain Suffix: amx.com`
	`Enter DNS Entry 1 : 192.168.20.5`
	`Enter DNS Entry 2 : 12.18.110.8`
	`Enter DNS Entry 3 : 12.18.110.7`
	`You have entered: Domain Name: amx.com`
	`DNS Entry 1: 192.168.20.5`
	`DNS Entry 2: 12.18.110.8`
	`DNS Entry 3: 12.18.110.7`
	`Is this correct? Type Y or N and Enter -> Y`
	`Settings written. Device must be rebooted to enable new settings`

Terminal Commands (Cont.)	
Command	Description

SET IP	Sets the IP configuration.
	Enter a Host Name, Type (DHCP or Fixed), IP Address, Subnet Mask, and Gateway IP Address.
	Note: For NetLinx Central Controllers, the "Host Name" can only consist of alphanumeric characters.
	• Enter Y (yes) to approve/store the information into the NXV-300.
	• Enter N (no) to cancel the operation.
	***Note**: The NXV-300 must be rebooted to enable new settings.*
	Example:
	`>SET IP`
	`--- Enter New Values or just hit Enter to keep current settings ---`
	`Enter Host Name: MLK_INSTRUCTOR`
	`Enter IP type. Type D for DHCP or S for Static IP and then Enter: DHCP`
	`Enter Gateway IP: 192.168.21.2`
	`You have entered: Host Name MLK_INSTRUCTOR`
	`Type DHCP`
	`Gateway IP 192.168.21.2`
	`Is this correct? Type Y or N and Enter -> y`
	`Settings written. Device must be rebooted to enable new settings.`

SET TELNET PORT	Sets the IP port listened to for telnet connections.
SETUP	Displays the panel setup page.
SHOW CONNECTION LOG	Shows the connection logs for the panel.
SHOW CONNECTION STATS	Shows the connection logs for the panel.

Terminal Commands (Cont.)

Command	Description
SHOW LOG	Displays the log of messages stored in the NXV-300's memory. The NXV-300 logs all internal messages and keeps the most recent messages. The log contains:· • Entries starting with first specified or most recent • Date, Day, and Time message was logged • Which object originated the message • The text of the message: SHOW LOG [start] [end] SHOW LOG ALL - <start> specifies message to begin the display. - If start is not entered, the most recent message will be first. - If end is not entered, the last 20 messages will be shown. - If <ALL> is entered, all stored messages will be shown, starting with the most recent. Example: >SHOW LOG Message Log for System 50 Version: v2.10.75 Entry Date/Time Object Text --- 1: 11-01-2001 THU 14:14:49 ConnectionManager Memory Available = 11436804 <26572> 2: 11-01-2001 THU 14:12:14 ConnectionManager Memory Available = 11463376 <65544> 3: 11-01-2001 THU 14:10:21 ConnectionManager Memory Available = 11528920 <11512> 4: 11-01-2001 THU 14:10:21 TelnetSvr Accepted Telnet connection:socket=14 addr=192.168.16.110 port=2979 5: 11-01-2001 THU 14:05:51 Interpreter CIpEvent::OnLine 10002:1:50 6: 11-01-2001 THU 14:05:51 Interpreter CIpEvent::OnLine 128:1:50 7: 11-01-2001 THU 14:05:51 Interpreter CIpEvent::OffLine 128:1:50 8: 11-01-2001 THU 14:05:51 Interpreter CIpEvent::OnLine 96:1:50 9: 11-01-2001 THU 14:05:51 Interpreter CIpEvent::OffLine 96:1:50 10: 11-01-2001 THU 14:05:51 Interpreter CIpEvent::OnLine 128:1:50 11: 11-01-2001 THU 14:05:51 Interpreter CIpEvent::OnLine 96:1:50 12: 11-01-2001 THU 14:05:51 Interpreter CIpEvent::OnLine 5001:16:50 13: 11-01-2001 THU 14:05:51 Interpreter CIpEvent::OnLine 5001:15:50 14: 11-01-2001 THU 14:05:51 Interpreter
VERSION	Shows the firmware version numbers.

Appendix B - Troubleshooting

This section describes the solutions to possible hardware/firmware issues that could arise during the common operation of a Modero touch panel.

Troubleshooting Information	
Symptom	Solution
When using G4 WebControl to communicate with a target panel, a VNC Server dialog appears on my screen.	• During a WebControl connection to a target panel, a G4 Authentication dialog will ask you to enter the assigned password for the panel before allowing access. • If prompted with a *VNC Server* dialog, enter the IP Address of the target panel. This can be found within the **Setup > Protected Setup > System Connection** page. This IP Address of the panel appears within the *IP Settings* section of this page • Enter the IP Address and click **OK**. When prompted with the G4 Authentication popup, enter the panel's WebControl password.
My Modero panel isn't appearing in my Workspace window.	• Verify that the System number is the same on both the NetLinx Workspace window and the System Connection page on the Modero panel. • Verify that you have entered the proper NetLinx Master IP and connection methods into the Master Connection section of the System Connection page.
My Modero panel can't obtain a DHCP Address	In requesting a DHCP Address, the DHCP Server can take up to a few minutes to provide the address. • Verify that an active Ethernet connection is attached to the rear of the Modero before beginning these procedures. • Select **Diagnostics** > **Network Address** from the *Main* menu and verify the System number. • If the IP Address field is still empty, give the Modero a few minutes to negotiate a DHCP Address and try again.
NetLinx Studio only detects one of my connected Masters.	Each Master is give a Device Address of 00000. • Only one Master can be assigned to a particular System number. When working with multiple Masters, open different instances of NetLinx Studio and assign each Master its own System value. • Example: a site has an NXC-ME260/64 and an NI-4000. In order to work with both units. The ME260/64 can be assigned System #1 and the NI-4000 can then be assigned System #2 using two open sessions of NetLinx Studio 2.
I can't seem to connect to a NetLinx Master using NetLinx Studio 2.	From the **Settings** > **Master Comm Settings** > **Communication Settings** > **Settings (for TCP/IP)**, uncheck the "**Automatically Ping the Master Controller** to ensure availability" box. • The pinging is to determine if the Master is available, and to reply with a connection failure instantly if it is not. Without using the ping feature, you will still attempt to make a connection, but a failure will take longer to be recognized. Some firewalls and networks do not allow pinging, though, and the ping will then always result in a failure. • When connecting to a NetLinx Master controller via TCP/IP, the program will first try to ping the controller before attempting a connection. Pinging a device is relatively fast and will determine if the device is off-line, or if the TCP/IP address that was entered was incorrect. If you decide NOT to ping for availability and the controller is off-line, or you have an incorrect TCP/IP address, the program will try for 30-45 seconds to establish a connection. ***Note**:* When trying to connect to a master controller that is behind a firewall, unchecking this option may be required. Most firewalls will not allow ping requests to pass through for security reasons.

Troubleshooting Information (Cont.)	
Symptom	Solution
I have more that one Modero panel connected to my System Master and only one shows up.	Multiple NetLinx Compatible devices (such as Modero panels) can be associated for use with a single Master. Each Modero panel comes with a defaulted Device Number value of 10001. When using multiple panels, it can become very easy to overlook the need to assign different Device Number values to each panel. • Press and hold the grey Front Setup Access button for 3 seconds to open the Setup page. • Press the **Protected Setup** button (located on the lower-left of the panel page), enter ***1988*** into the on-screen Keypad's password field, and press **Done** when finished. • Enter a Device Number value for the panel into the Device Number Keypad. *The default is 10001 and the range is from 1 - 32000*.
After downloading a panel file or firmware to a G4 device, the panel behaves strangely.	Symptoms include: • Having to repeat the download. • Inability to make further downloads to the panel. May get "directory" errors, "graphics hierarchy" errors, etc.… indicating problems with the Flash memory. • Panel will not boot, or gets stuck on "AMX" splash screen. • Other problems also started after downloading to a new panel or a panel with a TPD4 file that takes up a considerable amount of the available Flash memory. Cause: • If the G4 device already contains a large enough file, subsequent downloads will take up more space than is available and could often corrupt the Flash memory. The demo file that typically ships with G4 panels is one such file. Solution: • DO NOT download TPD4 files (of large size) over the demo pages, or any other large TPD4 file. • First download a small blank one page file to the G4 panel using the Normal Transfer option to send/download the page. Reboot the device, then do your regular file or firmware download.

It's Your World - Take Control™

3000 RESEARCH DRIVE, RICHARDSON, TX 75082 USA • 800.222.0193 • 469.624.8000 • 469-624-7153 fax • 800.932.6993 technical support • www.amx.com

12/12 ©2012 AMX. All rights reserved. AMX and the AMX logo are registered trademarks of AMX. AMX reserves the right to alter specifications without notice at any time.